Government "Aid to the Railways"

The problem of devising and adopting means that will start a real revival of business has become, as a result of the long and profound depression, the most difficult and important economic problem with which the American people ever have been confronted. There are several indications of the beginning of improvement, but the total volume of production and commerce is still less than one-half of what it was three years ago and only two-thirds of what it was a year ago; and while every precaution should be taken to avoid doing anything that may retard the improvement apparently beginning, every effort should also be made that reasonably promises to stimulate it.

The *Railway Age* ordinarily is opposed to almost every form of government interference with or aid to business, but this is no time for doctrinaire preaching or practice. No competent physician would give poison to a well man, but some poisons are the only antidotes that will prevent other poisons from causing death. The principal cause of the present condition of business is that it has been given too much of the poison of governmental interference and extravagance, and perhaps governmental aid to business has become a necessary antidote to past excessive governmental interference with it. If so, the patient should be given enough of the poison of government aid to pull him through the crisis. Radicals and socialists will use the government aid now given as an argument for more governmental interference and larger government expenditures in future, but this will be no good reason, after the patient has begun to convalesce, why those who are not radicals and socialists shall not advocate great reductions of both government aid and government interference as permanent policies.

How Government Has Injured Railways

The question as to the extent to which, in the present crisis, government aid should be given to business has become one of very direct importance and concern to the railways, the manufacturers of railway equipment and supplies and their employees. The railways are in the worst financial condition of any large industry in the United States. The curtailment of their power to give employment and make purchases has put more than a half million railway men out of work, reduced three-fourths below normal the volume of their purchases from manufacturers and proportionately reduced employment in manufacturing. The government has contributed to this curtailment of railway employing and purchasing power in several ways. First, the Interstate Commerce Commission persistently refused throughout the recent period of prosperity to carry out the rate-making provisions of the Transportation act. Second, the national and state governments have subsidized and failed to regulate the waterway and highway competitors of the railroads. Third, the national administration caused capital expenditures to be made in 1930 which exceeded by at least 400 million dollars those that would have been made if railway managements had acted on their own judgment. Fourth, the national administration influenced railway managements to refrain throughout two years of depression from seeking reductions of wages at a probable cost to the railways of a half billion dollars.

The prostration of the railroad industry by the depression and these special forms of government interference has made it one of the greatest obstacles to a revival of general business. As means of helping it to contribute, first, toward the prevention of the collapse of the national financial structure, and, second, toward a revival of business, the government, through the Reconstruction Finance Corporation, is loaning the railways money for one purpose, and proposing to loan them money for another purpose. It is now making them loans to enable them to meet the interest and maturing principal of their debts. It is proposing to make them loans to enable them to increase the repairs of their equipment and permanent structures—in other words, to do maintenance work which could continue to be deferred, but which will have to be done some time to put them into a condition to handle the larger volume of traffic that will be offered when general business revives.

Private Industry Versus Public Works

It is a fact which often is overlooked or disregarded, but which should be plain and is of fundamental importance, that there is a wide difference

between making government loans to railways and other private industries and the spending of government money upon public works, such as postoffice buildings, waterways, and highways. Whether the postoffice buildings, highways and waterways are actually needed is always a debatable question, and no provision ever is made for restoring to the public treasury the principal of the investment in them or for having paid into the public treasury interest upon that investment. On the other hand, railway and other private companies to which government loans are made assume the obligation of repaying the principal and thus far have obligated themselves to pay interest on it at six per cent, although the government gets it for about four per cent. The loans made to the railways to enable them to avoid receivership are called "aid" to them, but actually are made, not for their benefit, but to protect holders of life insurance policies, depositors in savings banks, and the general public, and when the railways pay the principal and interest of these loans the government will actually have made a profit by them for the taxpaying public.

The question of the government making loans to the railways to enable them to do maintenance work, which is now under consideration, is an entirely different one from that of loaning them money to pay their debts and interest on them. The money would be expended for labor, materials and supplies and this would increase employment and purchases and tend to stimulate general business. To whatever extent it stimulated general business it would increase the traffic and earnings of the railways themselves. The relief bill passed by Congress contemplated expenditures upon "self-liquidating" public works and direct and indirect loans to private industry, all for the purpose of increasing employment and stimulating business. The great decline in production, commerce and employment has occurred entirely in private business, and the restoration of prosperity can be accomplished only by reviving private business, because, directly and indirectly, private business must provide all incomes, including those from which come the taxes spent upon public works. The railroads are a great private industry which makes all its purchases from other private industries. Therefore, on every economic and practical ground the argument for advancing government money to the railroads to enable them to make immediately expenditures upon their equipment and permanent structures which must some time be made, anyway, is far stronger than the argument for spending money upon public works.

Government Loans for Railway Maintenance

The expenses of repairing and maintaining railway property are, however, *operating expenses that ordinarily are paid from current earnings.* For the railways to borrow money and thus increase their indebtedness to pay operating expenses would be, excepting under the most abnormal conditions, an unprecedented monstrosity in management. It would defy the system of accounting established for them by the government through the Interstate Commerce Commission, and could not be justified upon any ground excepting that it was done in a period of great emergency to promote the national welfare. When the railways pay maintenance expenses from earnings they do not have to pay interest upon the money spent. If they should accept government loans to make maintenance expenditures would they be required to pay interest upon the loans? The proposed expenditures would, to the extent of any interest paid upon the money, exceed those that would have to be made later from earnings for the same purpose unless the wages and prices that would have to be paid now are lower than those that would have to be paid later. Unless conditions change rapidly, railway wages will soon have to be further reduced. An increase of purchases now would have the same tendency to increase prices that it would have later. It seems probable, therefore, that, unless government loans for maintenance purposes were made without any charge for interest they would make the work cost more now than it would cost later.

An outcry against government loans to the railways without interest would arise immediately from those who would rather have the entire nation become bankrupt than have the government give any real aid to the railways, and, through them, to private industry. Curiously enough, however, those who would be the first to oppose government loans without interest for maintenance work to the railways which would have to repay the principal, are also the strongest advocates of the investment of government funds in highways, waterways, public buildings and other public works from which the government never derives a penny of interest or recovers a penny of principal. If it is worth while, as a means of helping revive prosperity, for the government to invest hundreds of millions of dollars, in public works from which it will never recover a penny of either principal or interest, upon what ground of economics or public policy can it be contended that it should not, for the purpose of stimulating business, loan to the railways money the principal of which it will get back? Certainly if railway managements are willing, in an effort to promote the public welfare, to defy every sound principle of business and accounting by using borrowed money to pay operating expenses, and to take all the risks that thus increasing their indebtedness to the government will involve, then the government, in the public interest, should be willing to loan them the money without subjecting them to the extra cost of paying interest upon it.

The *Railway Age* believes that the government should make large loans from its relief fund to the railways to enable them immediately to increase their expenditures for maintenance. It believes that these

loans should be made without interest, because otherwise the railways would incur an expense which, under no system of accounting, is properly chargeable to operating expenses. It believes that because, excepting to aid the nation in a great emergency, the proposed increased expenditures for maintenance would not be made until earnings increased, they should be charged to future operating expenses only as future earnings warrant it and as the loans are repaid.

Railway Maintenance and General Business

As a means of increasing employment and purchases, and thereby reviving business, no better and more effective use could be made of the government funds recently rendered available by the passage of the "relief" act. The railways thus far in 1932 have reduced their maintenance expenditures 48 per cent, or at the rate of almost one billion dollars a year, as compared with those of 1929, and 43 per cent, or at the annual rate of 750 million dollars, as compared with those of 1930. They employ labor and make purchases in every section, and consequently the adverse effects on business of the reductions of their maintenance expenditures have ramified into every section and community. They are not only directly large employers of labor in carrying on their normal maintenance work, but among the very largest purchasers of iron, steel, lumber and innumerable finished products and raw materials and therefore indirectly very large employers of labor. As the reductions of their employment and purchases for maintenance purposes have helped to spread disaster throughout the country, so a substantial increase in their expenditures for these purposes would be one of the most potent influences for a revival of general business. Because of the great reductions in their expenditures for maintenance, their equipment and permanent structures, especially the former, are in worse condition now than following the shop employees' strike in 1922, and the large increase in traffic that occurred in the fall of 1922 resulted in a "car shortage" which was the largest in history, and which lasted from September 1, 1922, to May 15, 1923, and caused huge losses to industry and commerce. To talk now about the possibility of a shortage of railway transportation when the railways are reporting more than 770,000 idle cars and a proportionate number of idle locomotives may seem absurd; but it would also have seemed absurd to have predicted in the summer of 1922 when they had 250,000 idle cars that in October, 1922, they would report a shortage of 175,000 cars.

Under normal conditions neither the railways nor any other industry should seek government aid. Every citizen who has intelligence enough to understand the causes of this terrible depression should, after it has passed, advocate a reduction of every form of government interference with and aid to business. Unfortunately, present conditions do exist, and they must be dealt with. Under these conditions there is probably no other single way in which government money could be more effectively used to help general business than by using it to help the railways to increase employment and purchases.

Loading Unfit Cars Causes Needless Delay

With all the efforts being put forth by the railways to increase train speeds, minimize terminal delays and provide a class of service comparable to that of modern highway competitors, it is difficult to justify the continued loading of freight cars which, because of defective mechanical condition, are unfit to proceed to destination without delay. This highly undesirable practice has received intermittent attention in the past with only partially satisfactory results. The loading of unfit cars at present is sufficiently costly and serious, not to say alarming, to warrant the closest study of underlying causes and remedies and the adoption of some definite program which promises improvement.

A careful investigation indicates that about one car of each 40 freight cars now being loaded in the United States is placed on a shop track for repairs before reaching its destination, because of defects existing for the most part before loading. This entails an average delay of at least 18 hours per car for ordinary freight and 12 hours per car for perishables, with resultant damage claims, dissatisfied shippers, increased transportation yard expense for switching cars to and from repair tracks, delayed train classification, etc. In the Chicago territory, for example, 167,075 cars were received in interchange in May of this year, 3,492 of these cars requiring repairs before proceeding to destination. A total of 1,205 cars had defective wheels and axles. Of the 3,492 cars repaired, 2,100 were reported with defects in existence when the cars were last loaded, and, when it is considered that many of the rest of these cars, as well as thousands of cars not passing through interchange, also had defects when loaded, the estimate of one defective car to 40 cars loaded is probably over-conservative.

Vigorous Action Justified

With all due regard to the difficulty which railroads are experiencing in adequately maintaining car equipment under present conditions, the loading of so many bad-order cars constitutes a serious loss of railway net revenue, shipper satisfaction and railway prestige, and justifies vigorous action to assure the selection of cars in the proper condition for loading and to prevent the delivery of these bad-order cars to connecting lines.

Apparent lack of careful preliminary inspection by the originating carriers must be credited as the principal cause for loading unfit cars. The delivery of these cars, unrepaired, to connecting carriers must also

be charged to inadequate inspection en route by the delivering line, or else to a selfish desire by this road to avoid its just obligation to assume the cost and delay incident to switching cars to and from its own repair tracks, and thus "pass the buck" to the next carrier.

In the interests of the railways as a whole, the American Railway Association, Freight Claim and Mechanical Divisions, are studying this problem from both a claims and a mechanical standpoint, and the proposed proration of resultant damage claims on a mileage basis may be practicable and give originating and intermediate carriers the necessary incentive to avoid the loading of unfit cars and the delivery of such cars to connecting carriers. The prospect of anything like a prompt agreement regarding this program, however, and making it effective in the near future is rather remote, and possibly more direct and satisfactory action could be secured by imposing a small penalty on delivering carriers for each instance in which they load an unfit car or deliver it to a connecting line.

The practical value of this type of penalty in promptly effecting much-desired improvement has recently been well illustrated in connection with the interchange of gondola and hopper cars with insecurely closed or open drop doors. Despite all previous efforts to correct this condition, in the interests of safety, 2,289 such cars were interchanged at one large terminal during the month of January, 1929. The American Railway Association then authorized the assessment of a penalty against the delivering line to the extent of one man-hour or 70 cents for each car delivered with open drop doors, and the result was a gradual decrease in the next 17 months from 2,289 to 177 cars received in interchange with insecurely closed or open drop doors.

The salutary effect of imposing even a small penalty on roads which contribute to the loading or delivery of unfit cars cannot be questioned and would doubtless be reflected in a prompt reduction of the number of these cars offered in interchange. In addition, this penalty, if set at $2 per car, could be used in all fairness to reimburse the receiving carrier, in part at least, for the cost of switching cars to and from repair tracks.

Central Interchange Bureaus Found Effective

It has been demonstrated that such problems in car handling as this can be effectively supervised by interchange bureaus at important railway centers with only a relatively small increase in inspection and clerical work. Possibly, one additional inspection card, made out in triplicate similar to the present A.R.A. defect card, and one monthly report, summarizing the records of individual carriers, would be the only additional forms required. No penalties should, of course, be imposed for defects developed in transit, and, at first, it might be well to confine the penalties to defects for which the A.R.A. has established definite limits of wear. The ultimate objective, however, would be to include also those judgment defect cases in which the supervisor's experience leaves no doubt of the existence of defects previous to loading.

With due precautions to avoid red tape and excessive technicality in administering this proposed penalty regulation, railroads generally will benefit by having an additional important incentive to avoid loading unfit cars, or, at least, to make necessary repairs before delivering the cars in interchange. Attention will be concentrated on this subject, with more complete records available and more uniform interchange conditions assured. The plan seems worth trying.

Slide-Detector Fences as Track Protection

In 1923 the Northern Pacific installed a fence of special design along a section of its track in Montana in such a manner that if a rock fell from the bluffs it would strike the fence and thereby operate a circuit controller which would open the line control and set the signals at stop, thus affording protection against obstructions on the track without requiring constant watchman service. Two years later a more extensive installation was made in Washington, in which three watchmen were eliminated for 10 months of the year. Since that time this road, as well as others, has made numerous installations of these slide-detector fences, special care being given to locating them in such a way as to insure that any sizeable rocks which might fall would strike one or more of the fences before fouling the track. This factor is very important; recently on a western road a large rock fell from a bluff, bounced over the telegraph line, and struck the track with such force as to throw it out of line, resulting in a train accident.

It is conceivable, on the other hand, that so many fences might be installed that rocks which would not result in a hazard would operate the signals so frequently and cause so many unnecessary train stops that the delays would be intolerable on lines handling heavy traffic. It was this consideration, following a train accident caused by a rock slide on an eastern road, that led the signal engineer to recommend that watchman service be continued, rather than to make extensive installations of detector fences. Much has been learned, since the first installation, regarding the mounting of the fence wire and the locating of the fences to reduce the number of unnecessary operations.

In spite of this difficulty there are numerous locations on many roads where detector fences will afford adequate protection and at the same time effect decided economies. It is evident, however, that the installation of these fences must be studied from several angles—the construction and placing of the fences, the location of the signals, the effect on train operation, and the economies effected.

The Tractor is Extensively Used by Railroads

Railroads Use Hundreds of Autos To Cut Costs

Survey of company-owned automobiles and tractors shows growth of motorized methods in supply and other work

AFTER more than a year of investigation, the *Railway Age* has completed a survey of automotive equipment in railway work. This survey does not pretend to cover all of this equipment utilized by the railroads. The increasing number of automobiles and highway trucks operated by or for the railroads in connection with the transportation of revenue passengers and freight has not been included and the same is true of employee-owned automobiles and commercially-owned highway trucks used continuously or periodically in the non-revenue-earning branches of the industry, the number of which probably exceeds that owned by the railroads. The present survey was conducted rather to determine the number of company-owned automobiles, auto trucks, industrial tractors and other trackless equipment used at railway storehouses, shops, passenger and freight stations, docks and piers, and other places, for handling material and performing other non-revenue work. The lack of complete records of this equipment and the absence of centralized jurisdiction or co-ordinated operation, generally to be expected with this character of equipment, leave the completeness of some of the records in doubt, especially with respect to automobiles used by transportation and engineering forces and industrial tractor equipment used in freight houses, but with records of practically every railroad and terminal company available, the survey affords the most detailed and complete data which have been developed on the growth and distribution of motorized equipment of the free-moving type in railway work.

More Than One Thousand Autos

The company-owned highway equipment engaged in company work, according to this survey, includes 61 motor buses, 374 passenger automobiles and 1,070 auto trucks, together with 302 auto-truck trailers. This does not include numerous ambulances, fire engines and other specially-constructed machines.

The equipment also includes 1,114 non-burden-bearing and 264 burden-bearing industrial tractors, 133 tractors equipped with hoists and 12 tractors with crawler treads, or a total of 1,725 tractors, including 202 unclassified units. According to the survey, the railroads also own 560 electric crane trucks, 423 self-elevating trucks and 567 motorized warehouse and baggage trucks, bringing the total number of powered units of the tractor type to 3,174. Additional equipment includes 430 jack lift trucks and various powered equipment of special construction, together with 36,895 trailers for industrial tractors including 29,927 flat-top trailers, 4,537 trailers with box bodies and 2,431 trailers for special uses. The accessories also include 33,246 containers for use with lift trucks, including 14,648 flat trays, 14,496 boxes and 3,400 containers of special types, not counting demountable sides for flat trays. The quantity of auxiliary equipment has been increased by an indeterminate amount on some roads since this survey was begun.

All Departments Equipped

This equipment is used exclusively by one branch of service in some cases, while in other cases certain of the equipment, while assigned to one department, performs services for other departments. Common examples are motor buses used for carrying employees to and from work, and highway trucks and tractors assigned to store forces and also handling material for shop or bridge and building forces, and vice versa.

With this explanation, it is noted that of 61 motor buses for which classified figures are available, 2 are operated by store forces, 4 by shop forces, 6 by roadway forces and 29 by station forces. Of a total of 350 automobiles for which classified reports are available, 11 are assigned to store forces, 8 to shop forces, 123 to maintenance-of-way and engineering forces and 191 to station forces, while of 831 classified auto trucks, 417 are assigned to store forces, 84 to shop forces, 274 to roadway forces, and 63 to station forces.

Of 1,523 classified tractors, 528 are assigned to store forces, 430 to shop forces, 19 to roadway forces, and 545 to station forces. In the case of electric crane

Railroad-Owned Automotive and Auxiliary Equipment Engaged in Non-Revenue Service *

	Motor buses	Automobiles	Highway trucks	Industrial tractors: Non-burden	Industrial tractors: Burden	Industrial tractors: Crane	Industrial tractors: Crawler	Industrial tractors: Total	Electric crane	Lift trucks	Motor baggage trucks	Total power units	Hand lift trucks	Auto-trailers	Tractor-trailers	Lift-truck skids	Special Equipment
Alton	..	..	1	2	4	..	..	6	..	..	..	6	2	..	62	79	..
Ann Arbor	..	..	2	1	..	..	..	1	..	..	..	1	..	..	...	...	..
Atchison, Topeka & Santa Fe	..	31	62	33	27	1	..	61	36	..	7	104	..	..	604	87	..
Atlanta & West Point	..	..	2	1	..	..	..	1	1	..	..	2	..	..	50	...	..
Atlanta, Birmingham & Coast.	1	..	1	..	..	..	..	..	..	..	..	..	..	..	...	...	..
Atlantic Coast Line	..	..	31	7	..	..	..	7	1	1	12	21	2	1	71	38	..
Baltimore & Ohio	..	10	20	40	..	..	3	43	56	24	..	123	9	60	893	932	5
Baltimore & Ohio Chicago Terminal	..	..	..	4	..	..	..	4	3	..	2	9	..	..	210	...	..
Belt Railway of Chicago	..	..	1	9	..	..	..	9	..	..	..	..	..	..	...	...	..
Boston & Albany	..	..	4	2	..	2	..	4	4	2	11	21	17	..	1,053	175	..
Boston & Maine	..	11	19	42	..	3	..	45	8	46	..	97	10	.	1,509	502	..
Buffalo & Susquehanna	..	..	..	1	..	..	..	1	..	..	..	1	..	..	1	...	..
Buffalo, Rochester & Pittsburgh	..	..	1	..	..	..	..	..	3	..	3	6	..	..	...	...	..
Canadian Pacific	..	3	12	22	..	1	1	24	21	7	55	106	3	..	257	338	6
Central of Georgia	..	..	4	5	..	1	1	7	..	31	..	38	1	..	45	30	..
Central of New Jersey	9	..	2	12	..	10	4	26	7	11	19	62	12	..	442	380	..
Chesapeake & Ohio	..	7	12	26	21	5	..	52	23	8	3	86	3	1	1,074	482	17
Chicago & Eastern Illinois	..	1	1	5	..	1	..	6	1	..	..	7	6	..	183	75	..
Chicago & Illinois Midland	..	..	..	..	..	..	..	..	1	..	..	1	..	..	...	...	..
Chicago & North Western	..	..	29	58	10	5	2	75	8	5	1	89	3	1	5,061	300	..
Chicago, Burlington & Quincy	1	19	25	84	12	13	1	110	14	9	2	135	24	..	4,074	1,451	..
Chicago Great Western	..	..	1	..	1	..	..	1	..	..	3	4	..	..	12	...	..
Chicago, Indianapolis & Louisville	..	..	3	3	..	..	..	3	..	..	..	3	..	.	...	...	..
Chicago, Milwaukee, St. Paul & Pacific	..	20	30	42	..	4	..	46	22	35	..	103	106	.	620	7,500	..
Chicago, Rock Island & Pacific	..	12	10	6	10	..	..	16	7	..	..	23	..	..	109	...	2
Chicago, St. Paul, Minneapolis & Omaha	..	..	3	1	1	..	..	2	..	2	..	4	..	..	...	...	..
Chicago, South Shore & South Bend	..	1	9	..	..	..	..	..	..	..	..	..	1	.	...	65	..
Chicago Union Station	..	..	..	22	..	..	..	22	..	..	8	26	..	..	880	...	..
Cleveland, Cincinnati, Chicago & St. Louis	..	17	12	16	4	..	..	20	13	5	1	39	25	47	316	2,109	..
Delaware, Lackawanna & Western	..	2	17	5	..	..	..	5	7	27	56	95	..	..	284	980	..
Denver & Rio Grande Western	..	..	..	..	5	..	..	5	2	..	..	7	..	..	71	...	..
Denver Union Terminal	..	..	..	2	..	..	..	2	..	..	3	5	..	..	...	...	..
Detroit Terminal Railroad Company	..	..	2	..	..	..	..	..	1	..	..	1	..	..	...	...	.
Duluth & Iron Range	..	..	..	..	..	..	..	..	1	..	..	1	..	..	...	...	..
Elgin, Joliet & Eastern	..	..	4	5	..	..	..	5	7	1	..	13	3	.	45	545	..
Erie	..	8	18	15	..	5	..	20	11	9	9	49	61	..	681	3,697	3
Florida East Coast	..	..	2	..	..	..	..	1	2	..	..	2	3	..	...	38	..
Fort Street Depot, Detroit	..	..	..	1	..	..	..	..	..	..	..	1	..	..	...	...	..
Fort Worth & Denver City	..	..	..	1	..	2	..	3	2	..	..	5	..	..	14	...	..
Georgia	..	..	1	..	..	..	..	..	1	..	..	1	..	..	...	...	..
Grand Trunk Western	..	..	11	5	1	..	..	6	4	..	..	10	..	..	949	...	..
Great Northern	3	26	28	24	4	9	2	39	3	10	17	69	16	..	...	1,024	3
Gulf Coast Lines	..	19	5	4	..	2	..	..	..	..	..	8	2	..	44	193	..
Gulf, Colorado & Santa Fe	..	..	..	..	..	..	..	..	..	2	..	...	2	..	...	...	..
Illinois Central	..	29	34	25	..	.	.	25	25	17	41	108	17	1	2,159	3,020	3
Illinois Terminal Railroad	..	1	7	..	..	..	..	..	..	..	..	..	..	..	...	75	..
Indiana Harbor Belt	..	..	2	5	..	..	..	5	1	..	1	7	..	..	312	...	..
Indiana Union Depot	..	..	..	4	..	..	..	4	..	..	..	..	..	..	...	...	..
International-Great Northern	17	..	6	4	..	4	..	8	2	5	..	15	..	..	95	300	..
Kansas City Southern	..	..	3	..	..	1	..	1	4	..	..	5	..	..	6	...	..
Kansas City Terminal	..	..	1	31	..	..	..	31	1	..	15	47	..	..	660	...	..
Kentucky & Indiana Terminal, Louisville, Ky.	..	..	..	..	..	..	..	..	1	..	..	1	..	..	...	...	..
Lake Superior & Ishpeming	..	..	..	..	1	..	..	1	..	..	..	..	..	..	...	...	..
Lehigh & New England	..	4	2	..	..	..	..	..	..	..	..	..	..	..	...	...	..
Lehigh Valley	..	..	12	34	3	1	..	38	11	1	84	133	3	..	947	40	2
Louisiana & Arkansas	..	..	..	1	..	..	..	1	..	..	..	1	..	..	1	...	..
Louisville & Nashville	..	..	6	24	..	..	..	24	3	..	..	27	..	..	915	...	..
Maine Central	..	..	2	3	..	..	..	3	1	..	..	4	20	..	7	...	..
Michigan Central	..	15	12	55	3	1	..	59	9	3	11	82	4	..	835	212	..
Minneapolis & St. Louis	..	1	1	1	..	3	..	4	..	..	..	4	..	..	12	...	..
Minneapolis, St. Paul & Sault Ste. Marie	..	7	2	..	1	..	..	1	..	4	..	5	6	..	15	275	..
Missouri-Kansas-Texas	4	3	7	3	..	..	..	3	7	6	4	20	..	..	20	...	..
Missouri Pacific	..	32	19	44	18	29	..	91	12	17	..	120	35	1	273	7,456	1
Mobile & Ohio	..	..	3	..	..	..	..	..	2	1	..	3	..	..	...	...	1
Nashville, Chattanooga & St. Louis	..	..	1	1	7	2	..	10	5	..	..	15	5	..	59	99	..
New York Central — Lines West	..	3	21	13	1	..	..	14	34	28	1	77	..	..	133	2,305	1
New York Central — Lines East	..	..	22	9	..	..	..	9	55	14	21	99	9	1	...	200	..
New York, Chicago & St. Louis	..	1	3	8	..	3	1	12	2	..	..	14	..	.	93	..	..
New York, New Haven & Hartford	..	4	45	139	10	1	..	150	30	15	11	206	2	..	3,978	213	48
New York, Ontario & Western	..	..	2	..	..	..	..	..	2	..	..	2	..	..	...	...	..
Norfolk & Western	..	4	16	43	51	..	..	78	20	2	..	81	..	..	1,582	...	..
Norfolk Southern	..	..	2	..	..	..	..	..	..	..	..	..	..	..	...	...	..
Northern Pacific	..	17	12	16	4	2	..	22	3	2	..	27	1	.	184	...	..
Northwestern Pacific	..	..	..	4	..	..	..	4	..	..	..	4	..	..	...	...	..

* Representing conditions in 1931.

Railroad-Owned Automotive and Auxiliary Equipment Engaged in Non-Revenue Service (Continued)

	Motor buses	Automobiles	Industrial tractors: Highway trucks	Non-burden	Burden	Crane	Crawler	Total	Electric crane	Lift trucks	Motor baggage trucks	Total power units	Hand lift trucks	Auto-trailers	Tractor-trailers	Lift-truck skids	Special Equipment
Pacific Electric	1	12	34	3	..	..	..	3	..	..	..	3	..	17	7	...	23
Pennsylvania †	20	..	179	..	..	..	..	159	11	25	..	195	..	..	...	...	..
Pere Marquette	..	1	3	7	..	2	..	9	..	..	..	9	..	1	141	...	2
Pittsburgh & Lake Erie	..	..	2	5	2	..	..	7	7	..	35	49	..	..	537	...	1
Portland Terminal Company	..	..	1	6	1	1	1	9	9	20	..	38	..	..	400	...	..
Reading	..	..	15	28	29	8	..	65	3	3	.	71	14	2	130	270	..
Richmond, Fredericksburg & Potomac	3	..	3	2	..	..	..	2	..	..	2	4	..	..	...	...	..
Rutland	..	..	..	..	..	..	..	..	1	..	2	3	..	..	...	...	..
St. Louis-San Francisco	2	..	6	17	..	..	..	17	3	1	..	21	..	..	55	...	..
St. Louis Southwestern	..	7	3	2	4	..	..	6	2	..	..	8	..	6	17	...	..
Seaboard Air Line	..	..	11	1	..	..	..	1	..	..	..	1	..	..	2	...	..
Southern ‡	..	..	14	4	..	1	..	5	..	..	..	5	..	..	11	...	..
Southern Pacific—Pacific Lines	..	12	93	35	1	6	1	43	1	11	2	57	8	160	1,998	1,641	..
Spokane, Portland & Seattle	..	..	1	1	..	..	..	1	..	..	..	1	..	..	2	...	..
Terminal R. R. Ass'n. of St. Louis	..	..	1	4	..	1	..	5	1	..	..	6	..	..	...	...	..
Texas & New Orleans	..	4	6	7	6	5	..	18	..	..	..	18	1	..	250	...	.
Texas & Pacific	..	6	11	..	2	4	..	6	3	1	..	10	4	3	24	73	..
Union Belt of Detroit	..	..	..	..	..	..	..	..	1	..	..	..	..	..	...	...	..
Union Pacific System	..	24	77	..	..	..	..	43	18	6	..	67	..	..	735	...	..
Wabash	..	..	2	14	4	..	..	18	10	1	..	29	..	..	221	100	2
Washington Terminal	..	..	..	5	..	..	..	5	2	..	37	44	..	..	...	...	..
Western Maryland	..	..	3	1	..	..	..	1	1	6	..	8	..	.	200	...	1
Wheeling & Lake Erie	..	..	1	1	..	..	..	1	1	..	2	4	..	..	...	...	..

† Excludes records of portable cranes and trailers.
‡ Incomplete as to shop and station service.

trucks, 98 of 549 classified units are operated by store forces and 430 by shop forces, while 392 lift trucks are divided, 164 among store forces, 82 among shop forces and 145 among freight handlers. Most of the jack lift trucks are used by store forces.

Automobile and Truck Installations Vary

Detailed analyses of the reports included in the survey show large variations both in the amount of equipment on different roads and in the amount utilized by different departments, as well as in the kinds of equipment used. Both with respect to highway and tractor equipment, monumental operations have been established on some roads and at some points, while the installations on other roads and in some departments of the roads are small. This has resulted in some instances from the widely varying operating conditions in different sections of the country, such as length of haul, character of roads, and volume of work, which have encouraged the use of highway and platform equipment in some cases and discouraged its use in others. The accessibility of other facilities for handling materials, including crane facilities in shops, has also been a factor, as well as the ability or economy of organizing work to use the equipment advantageously.

The relatively small amount of highway equipment owned by some roads has also been influenced by the preference shown by those managements for the utilization of employee-owned automobiles and commercially-owned trucks, for which the owners are paid on a daily or monthly allowance or mileage basis, with or without free gasoline and oil, or under contract arrangements. Another factor is the hesitancy of some managements to favor extensive highway work while condemning the use of highways by shippers for moving revenue freight. Much of the variation in the utilization of highway and platform equipment, however, suggests variations in the interest of local forces or managements of the different railroads or departments in this form of handling. On some roads, motorized methods have been made the subject of special study by committees directed not only to explore the possibilities, but to co-ordinate activities.

Roads owning the largest number of automobiles include the Santa Fe with 31, the Burlington with 19, the Rock Island with 13, the Big Four with 17, the Great Northern with 26, the Gulf Coast Lines with 19, the

Railroad-Owned Trackless Automotive Equipment Engaged in Non-Revenue Service

	Stores	Shop	Roadway	Stations and Misc.	Unclassified	Total
Motor buses	2	4	6	29	20	61
Passenger cars	11	8	123	191	42	392
Highway trucks	417	84	274	63	232	1,070
Industrial tractors: Non-burden bearing	344	236	10	523	...	1,114
Burden bearing	120	122	4	18	...	264
Crane-equipped	62	67	2	2	...	133
Crawler-traction	2	5	3	2	...	12
Tractors—All kinds	528	430	19	545	202	1,725
Electric crane trucks	98	430	2	19	11	560
Lift trucks	164	82	1	145	31	423
Motorized warehouse trucks	29	65	...	160	...	254
Motorized baggage trucks	6	13	2	192	...	213
Total power units	825	1,020	24	1,042	244	3,174
Hand lift trucks	328	106	...	6	...	430
Auto-truck trailers	175	106	21	....	...	302
Tractor-trailers: Platform types	4,138	1,318	8	24,463	...	29,927
Box types	3,332	393	2	810	...	4,537
Special types	1,031	605	...	795	...	2,431
Trailers—All kinds	8,501	2,316	8	26,078	735	36,895
Lift-truck skids: Platform types	11,708	2,295	...	1,145	...	14,648
Box types	13,100	1,329	...	69	...	14,498
Special types	2,673	726	...	1	...	3,400
Total skids	27,681	4,350	...	1,215	...	33,246
Special equipment	23	14	37	52	...	126

Distributing Bridge and Building Materials on the Great Northern

Illinois Central with 29, the Michigan Central with 15, the Missouri Pacific with 32, the Northern Pacific with 17, and the Union Pacific with 24.

On the Santa Fe, 3 of the automobiles, which comprise cars of various models and sizes, are assigned to stores forces, 1 to shop forces, 9 to engineering forces and 18 to transportation and traffic forces. The cars on the Rock Island are used chiefly by engineering forces. On the Big Four, they are divided 2 among roadway forces, 3 among transportation forces and 12 among engineering forces. On the Great Northern, the assignment is 6 to roadway forces, 1 to the transportation department, and 19 to engineering forces. On the Gulf Coast lines, the assignment is 1 to store forces, 2 to roadway forces, 8 to the transportation department and 8 to the engineering department. On the Illinois Central, the assignment is 1 to the stores, 1 to the mechanical department, 1 to the transportation department, 3 to the police department, and 23 to the traffic department. In addition to the company-owned automobiles, it is re-emphasized that many roads utilize considerable employee-owned equipment, the Burlington, for example, with 19 company-owned automobiles, paying allowances of various amounts to employees for the use of more than 50 cars, these employees including superintendents, train masters, car foremen and others.

The Pennsylvania stands out as the largest operator of company-owned highway trucks, with 179 units. the Southern Pacific reporting 93 and the New York Central lines reporting 67. On the Southern Pacific, the trucks are assigned as follows: 56 to stores, 1 to the shops, 29 to the maintenance-of-way and construction department, 4 to engineering forces and 3 to telegraph forces.

Auto Trucks in Stores Work

Other roads owning large numbers of auto trucks include the Santa Fe with 62 machines, ranging from 1½ to 3½ tons in capacity, 43 of which are operated by stores forces, 5 by shop forces, 3 by bridge and building forces, and 11 by transportation forces. The Atlantic Coast Line has 31 trucks of ½ to 1-ton capacity, 22 of which are assigned to store forces and 7 to mechanical forces. The Baltimore & Ohio has 20 trucks, 10 assigned to store forces, 5 to shop forces, 2 to maintenance-of-way forces and 3 to the operating forces. The Chicago & North Western has 29 trucks, all over 1-ton capacity, including 22 operated by stores forces and 5 by maintenance forces. Another large owner of highway trucks is the Burlington, with 25 trucks of 1 to 3-ton capacity, 21 of which are assigned by the stores forces. On the Great Northern, the highway trucks number 28, assigned 4 to the stores, 7 to shop forces, 5 to bridge and building forces, 2 to the operating department and 1 to the engineering department. The Illinois Central has 34 machines, 18 operated by the stores, 11 by the maintenance-of-way, 4 by the engineering and 1 by the hospital department. Attention is again called to the fact that the reports of company-owned highway trucks do not include commercially-owned auto trucks or contractors' equipment utilized from time to time by roads for various kinds of work, particularly in the maintenance and construction departments.

Many Large Tractor Installations

The Pennsylvania also appears to be the largest operator of industrial tractors, with 159 units. The next largest user is the New Haven, which has 150 tractors assigned as follows: 4 tractors and 62 trailers to the store forces, 19 tractors and 74 trailers to shop forces, and 127 tractors and 3,842 trailers assigned to stations and freight houses. The Burlington is another large operator, with 110 tractors and 4,074 trailers assigned chiefly to stores forces. The number of tractors on the New York Central is 102, and the trailers is 1,284. The Santa Fe reports 61 tractors and 604 trailers, assigned for the most part to the stores and shop forces. The Chesapeake & Ohio has 52 tractors and 1,074 trailers, assigned chiefly to stores and shop forces. The North Western has 75 tractors and 5,601 trailers, of which 51 tractors and 4,664 trailers are used in freight stations. The Union Pacific reports 43 tractors and 735 trailers, and the Southern Pacific 43 tractors and 1,998 trailers, operating for the most part in stores and freight-station service.

Roads reporting large lift-truck operations include the Boston & Maine with 46 trucks and 502 containers, most of which are used in the stores department. Forty of the lift trucks are used in freight-station service. The Lackawanna is another large user with 27 machines, 15 lift trucks and 260 containers assigned to New York piers, and 2 lift trucks and 700 containers assigned to the Jersey City warehouse. The Missouri Pacific has 17 lift trucks and several thousand containers which are used for the most part in the stores and shops. The New York Central system is also a large lift-truck user, with 42 power units and 2,500 containers on the N. Y. C. itself, 3 machines and 212 containers on the Michigan Central, and 5 machines and 2,109 containers on the Big Four, all of this equipment being used chiefly in shop and stores work. Other large users of lift trucks include the Pennsylvania with 25 units, the Portland Terminal Company with 20, the Southern Pacific-Pacific system, with 11 and the Milwaukee with 35 trucks

and 7,500 containers, operating chiefly in stores and shop service.

Many Uses for Equipment

The equipment is utilized by the railroads in a great variety of ways. The principal use of the motor buses is to replace train service for carrying employees to and from work. The automobiles are utilized by freight solicitors, lumber inspectors, etc., to reach points not served by the railroad, as well as to expedite the movement and otherwise facilitate the work of engineering parties, line men and supervisors' forces going from one station on the railroad to another where train service is infrequent. In one case, a two-day trip by rail between the terminals of two branch lines is made in an hour by automobile. On the Texas & Pacific, automobiles permit water inspectors to reach several more stations in one day than can be done by train service. On the Burlington, special agents have saved the road a great deal in freight claims by the more effective policing of territories subject to box-car pilfering than could be done by rail. Some automobiles are traveling over 3,000 miles per month on company business.

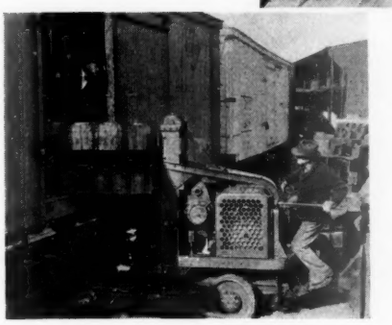
The highway trucks are used separately or in conjunction with the tractor equipment around shops and storehouses to haul company material from freight houses or cars to storehouses or to points on the line. In many cases reported, they dispense with train service. This is particularly true in terminals although the company-owned equipment is being used to an increasing extent in the delivery of materials to outlying points. Recently one road has begun to deliver coal to suburban stations by truck with an estimated saving of 60 to 85 cents per ton and the elimination of the dirt from handling the coal over stations and platforms from cars.

The Burlington uses highway trucks extensively for conducting bridge and building work at larger points. On the New Haven where highways parallel much of the track, the bridge and building forces find the highway trucks "exceedingly" useful. They are considered almost indispensable to the bridge and building department on some places on the Missouri Pacific. Two North Western trucks operate 16 miles from headquarters to bridge and building jobs.

On the Southern Pacific, bridge and building forces estimate a 50 per cent saving over motor-car operation in delivering bridge timbers, men and tools within a radius of 20 miles, and report a 75 per cent saving over work-train service for similar work. At Sacramento, Cal., and Los Angeles, on this road, it is common to carry materials, tools and men 25 to 35 miles to jobs of several days' duration. On the Long Island, it is common to ship material for bridge and building work by car to the nearest siding and distribute it to the work by truck. Company-owned highway trucks are now commonly used in most of the large terminals. In delivering material from the stores or to sections in one terminal, one highway truck is considered equivalent to three cars and performs work in a few hours that would otherwise take several days by train and switching movement.

Crane Operation on the Santa Fe

Right—Loading Freight by Mechanical Methods



Left—Handling by Lift Truck on the Erie

In storehouses and shops, the tractors and trailers and the lift trucks and containers are utilized in moving materials between cars and platforms, distributing materials from the storehouses to shops, moving material from machine to machine in shops, and performing various other work around the terminals, including road building, handling scrap and clearing grounds.

The lift truck and containers are utilized in freight stations and storehouses and shops to move materials in bulk lots within the terminal and in storing them in bulk quantities, and also in shipping materials. In some localities, with this equipment, some material does not touch the ground from the time it leaves the factory until it is applied. The electric cranes are being used largely in material yard shops, roundhouses, and car-repair yards for unloading and loading heavy materials and in removing or applying parts to equipment. The uses are widely varied and the savings reported in many operations striking.

The variety of equipment used and its adaptability for various kinds of work are illustrated on the Pacific Electric, which operates the following automotive equipment in non-revenue service:

Pacific Electric Equipment

Classification	*Type*	*Capacity*	*Number*	*Classification totals*
	ENGINEERING DEPARTMENT			
Motor coaches	Single deck.....	16-passenger	1	1
Automobiles	Touring	5-passenger	1	
	Sedans	5-passenger	2	3
Highway trucks	Dump truck.....	.....	1	
	Air-compressor trucks	1-ton	2	
	Trucks	1½-ton	2	
	Pick-up body trucks	½-ton	1	

Classification	Type	Capacity	Number	Classification totals
Engineering Department				
Highway trucks	Dump truck	3½-ton	2	
	Truck	4-ton	2	
	Dump truck	2½-ton	3	
	Truck	2½-ton	3	16
Highway trailers	Tool trailer	2-ton, 4-wheel	1	
	Oil tanks	2-ton, 4-wheel	2	
	Oil tank	3-ton, 4-wheel	1	
	Low bed	35-ton, 6-wheel	1	
	Air compressor	4-wheel	1	
	Air compressor	2-wheel	1	
	Oil tank	4-ton, 4-wheel	1	
	Water sprinkler	400-gal., 4-wheel	1	
	Tool trailer	4-wheel	1	10
Special equipment	Roller	13-ton, 3-wheel	1	
	Steam roller	5-ton	1	
	Roller	9-ton, 3-wheel	2	
	Roller	12-ton	2	
	Heating kettle	25-gal., 2-wheel	5	
	Pouring kettle	80-gal., 2-wheel	2	
	Pouring kettle	50-gal., 4-wheel	1	
	Asphalt surface heater	2-wheel	1	
	Concrete mixer (iron tires)	4-wheel, 12-cu. ft.	1	
	Concrete mixer (rubber tires)	4-wheel, 4-cut. ft.	1	
	Portable rail grinder trailer	2-wheel	2	
	Electric shovel	1½-yd. bucket	1	
	Loader		1	
	Rock cart (hand cart)	4-cut. ft., 2-wheel	1	
	Asphalt spreader (hand cart)	2-wheel	1	23
Claim Department				
Highway automobiles	2-door sedan	5-passenger	1	
	Roadster	2-passenger	4	
	Coupe	2-passenger	1	6
Store Department				
Highway trucks	Stake body	2-ton	1	
	Stake body	1-ton	1	
	Pick-up body	½-ton	1	
Store-Delivery System				
Electric tractors		4,000 lb.	1	
		4,000 lb.	1	
Gasoline tractors	Non-burden bearing tractor	4-wheel	1	
Tractor-trailers		3,500 lb.	7	
Electrical Department				
Highway trucks	Tower trucks	1½-ton	6	
	Tower truck	2-ton	1	
	Truck	1½-ton	1	8
Highway trailers	Trailers	1½-ton	4	
	4-wheel iron-tired pole wagon		1	
	Pole derrick		1	
	Two-wheeled iron-pole dolly		1	7
Substation Maintenance				
Highway trucks	Closed body		1	1
Telephone Maintenance				
Highway trucks	Closed body		1	1
Mechanical Department				
Highway trucks	Service truck		2	2
Los Angeles Motor Coach Company				
Highway trucks	Screen body delivery truck		1	
	Service truck		1	
	Screen body service truck		1	3
Highway automobiles	Roadsters	2-passenger	2	2
Harbor Belt Line Railroad Company				
Automobiles	Sedan	5-passenger	1	1

Road Building Grows

Recognizing the importance of hard roads to the effective and economical use of automotive equipment, an attempt was made to determine the extent to which roads have been provided at terminals for this purpose. In the absence of complete data, the extent of these facilities is best indicated by the work done by individual railroads. The Atlantic Coast Line has provided 2,000 lin. ft. of rock and 3,000 ft. of concrete pavement for shop and stores operations. The Santa Fe reports 16 miles of concrete paving at shop terminals. On the Baltimore & Ohio, the paving amounts to 2 miles of rock and ½ mile of concrete. The Chesapeake & Ohio has provided approximately 9 miles of concrete road around its storehouses and shops. The equipment on the Chicago & North Western operates over 6,000 ft. of rock road and 1,400 ft. of concrete. Storehouse and shop roads on the Burlington include 10 miles of rock and approximately 12 miles of concrete. On the Milwaukee, there are 8 miles of rock road and 4 miles of concrete for the storehouse and shop equipment. The Chicago Union Station has 12 miles of concrete paving available for its baggage-handling equipment. More than a mile of concrete paving has been built in the vicinity of shop buildings on the Big Four. Roadways on the Delaware, Lackawanna & Western include 9,000 ft. of concrete paving and 11,000 ft. of planking. The Elgin, Joliet & Eastern has built 6,800 ft. of concrete road for its stores and shop equipment. There are 12,500 ft. of concrete road on the Erie and 18,000 ft. of concrete on the Great Northern. Store and shop equipment on the Lehigh Valley is served with over 11,000 ft. of concrete paving. On the Missouri-Kansas-Texas, most of the paving is crushed rock, amounting to 23,900 ft., while the Missouri Pacific has laid 16,290 ft. of crushed rock and 29,227 ft. of concrete. The Pere Marquette has built 14,500 ft. of concrete paving and the Southern Pacific-Pacific lines, 10,155 ft. of crushed rock and 20,573 ft. of concrete for its equipment.

THE FIRST MAIN LINE ELECTRIFICATION in England, operated on the 660-volt, d. c., third-rail system, was opened for traffic by the Southern on July 17. From Purley, at the end of one of the railway's electrified lines in the London suburban area, the new section extends southward to Three Bridges, on the main line to Brighton and Worthing, all of which is now being converted to electric operation.

THE LONGEST BRIDGE IN EUROPE, across Masned sound, between the islands of Zealand and Falster, is to be constructed by Dorman, Long & Company, Ltd., Middlesborough, England, according to a contract recently awarded by the government of Denmark. With a total length of more than two miles and a maximum clearance for navigation of 87 ft., the bridge will cost approximately $10,000,000 and will take three and one-half years to build. It will carry a roadway, a sidewalk and a single railway track connecting existing lines of the Danish State system on the two islands.

What Treatment for Water?*

A. R. E. A. committee discusses limits of hardness for "interior" and "complete" methods of softening

ONE of the most frequently presented problems in water service is to determine whether a natural water should be used as locomotive feedwater without any treatment or with merely the introduction of suitable chemicals into the water in the roadside tank or the engine tank, or whether the water should be treated in an independent wayside plant with lime and soda or whatever chemicals are necessary to soften and put it into good boiler condition. It is the opinion of the committee that few natural waters are so good that some form of treatment does not improve them and, further, that boilers are in the best condition when the water in them has a sodium alkalinity sufficient to inhibit scale and corrosion, which is never less than three grains per gallon and should always amount to 15 per cent of the total dissolved solids. With good natural waters, this usually means the addition of perhaps ½ lb. of soda-ash, or its equivalent, to each 1,000 gal. of water put into the boiler.

Interior Treatment

Good natural waters and those intermediate waters which are hard enough to cause scale and leaking in boilers but yet do not rank with the very bad waters, are commonly handled by what is called "interior" treatment.

This does not mean that the boiler is treated in any way but merely that the water is treated with an amount and kind of chemical which will not precipitate scale matter when cold but will do so when raised to the temperature of the boiler. The chemicals for "interior" treatment cost as much as those for "complete" treatment, sometimes more, and the principal difference in expense between the two methods is the interest and depreciation on the plants.

It is the experience of the committee that complete treating plants pay a reasonable return when treating 5,000 gal. per day of water having a hardness of 8 g.p.g., but that if a smaller quantity of water is to be treated daily and the hardness is less than 8 g.p.g. it is usually more economical to provide only interior treatment.

When, however, the 8 grains of hardness are mostly sulphate it is better to use complete treatment because the water will be likely to foam if it carries not only the 8 grains of sodium sulphate but also the total precipitate. There are also cases where railroads have wisely provided complete treatment for water containing 8 grains of hardness that is not mostly sulphate because the amount of water used per day, from one to five million gallons, is such that the advantage of water which is soft and clean as it enters the boiler is much more than the interest and depreciation on a complete treating plant.

When to Use Interior Treatment

There is a very important distinction between the possibility and the desirability of operating locomotive boilers with certain kinds of waters subjected to interior treatment. It is generally accepted that for small amounts of water not exceeding a hardness of 8 g.p.g. it is satisfactory and usually cheaper to use interior treatment. In such circumstances it may be said that interior treatment is desirable. It is also beyond dispute that for waters of a hardness of 25 g.p.g. and over, the softening of the waters and the separation of the precipitate should be carried out in a complete treating plant. It is only on divisions where the average water hardness is between 8 and 25 g.p.g. that the question arises as to whether interior treatment is possible, and, if so, desirable.

By the term "average hardness" is meant not necessarily the average hardness of the waters of the division but the average hardness of the water that is used. When 75,000 gal. of water per day is taken from a low-hardness supply and 25,000 gal. per day from a high-hardness supply, the difference in method of reporting is important.

With waters having an average hardness of between 8 grains and 25 grains the question is: Below what point is interior treatment possible for tonnage trains in fast main-line service, operated by ordinary engine crews (rather than by expert western crews who have handled foaming boiler water all their lives) who are expected to handle the trains uphill or down without foaming and without the use of anti-foam compound and excessive blowing-down? We take our answer from the Wabash which uses waters that are said to average 15 g.p.g. hardness and to be almost free from alkali salts, and which has employed soda-ash, added to water in the roadside tanks, as the only boiler treatment for several years.

The average hardness of the waters handled successfully by interior treatment on the Canadian National between Sarnia, Ont., and Montreal, Que., is less than 11 grains per U. S. gallon, and the alkali salts average about 3 g.p.g. Even with such waters the strict enforcement of a road blow-down schedule is necessary for successful operation, and experience shows that much supervision and patience are required.

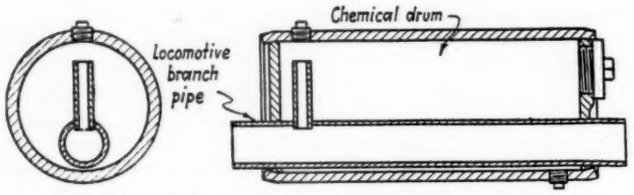
Hardness Only One Factor

It is with great hesitation that we specify limits of hardness as determining when interior treatment is possible and when it is desirable, because hardness is only one of the factors involved. We believe that the figures of 15 and 8 g.p.g. are approximately correct for waters low in alkali salts when used in an average locomotive boiler by an average crew. But a boiler with 18 in. of vertical steam space between the water surface and the steam exit will carry much worse water than can be carried by a boiler with an 11-in. steam space. Mud, oil and organic slimes in water affect its foaming qualities materially; and there are some further differences in waters which we are not yet able to explain, because on the same railroad and with other conditions approximately equal the boilers on one division always foam when the alkali concentration is 100 g.p.g., on another division when it is 180 grains, and on still another when it is 300 grains. There are a few waters with a hardness of between 15 and 25 grains that can be handled by interior treatment when all the above conditions are

* This is an abstract of the material given in Appendix C of the report of the A. R. E. A. Committee on Water Service and Sanitation, presented at the 1932 convention. The late C. H. Koyl, who was engineer of water service of the Chicago, Milwaukee, St. Paul & Pacific, was chairman of the subcommittee that presented this report.

in their favor, but success should not be expected by the inexperienced.

In connection with what is known as complete treatment with lime and soda-ash for very bad waters, attention is called to the fact that some natural waters contain silica, either in a colloidal state or in solution, which is not affected by ordinary processes of water softening, so that it has often happened that water



Chemical Container Constructed Around Locomotive Branch Pipe

softened down to 2 g.p.g. or less, has deposited in boilers a very troublesome scale which is found to consist of about equal parts of silica and entrained calcium carbonate. At the meeting of the American Chemical Society at Indianapolis, Ind., in March, 1931, successful tests for removing silica from water by treatment with sodium aluminate were reported, the process being the formation of calcium or magnesium-aluminum-silicate which settles out.

At one water station on the Chicago, Milwaukee, St. Paul & Pacific, where 30,000 gal. of Mississippi River water is treated per hour, there had always been trouble from this silica scale. However, a slight but carefully adjusted excess of sodium aluminate now decreases the silica content of the water from 0.6 g.p.g. to 0.1 g.p.g. in the treating plant, and the excess of alumina over silica in the water in the boiler effectively prevents silica scale.

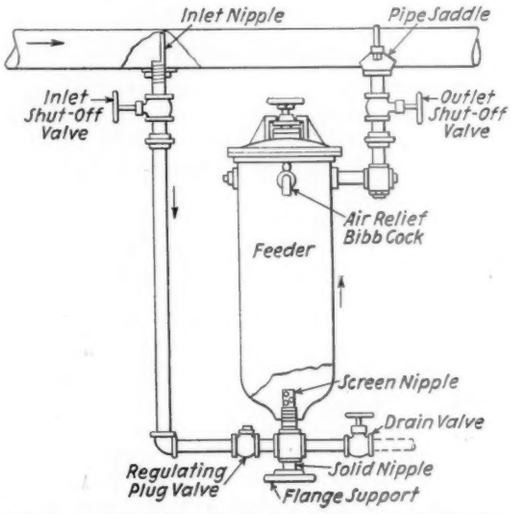
Various chemicals (soda-ash, tri-sodium phosphate, sodium aluminate and the tannin compounds) are in approved use for interior treatment. Of these, soda-ash is always used in sufficient amount to antidote the sulphate hardness, the other sodium compounds being employed to supply the excess alkalinity and expedite the precipitation so as to lessen the tendency to foam. The tannin compounds are used to prevent precipitation in the injector and connecting pipes.

Methods of Proportioning Chemicals

When chemicals are fed to the engine tank on the road, or even to the boiler while in the enginehouse, there are possibilities of error due not only to lack of training but sometimes to prejudice, but practical methods have been developed for making the delivery of chemical proportional to the delivery of water to either the roadside tank or the boiler. A by-pass proportioning device for adding soda-ash to the roadside tank at each water station has been in successful use on the Wabash for a number of years, while a feeder device for adding compound to the water in the roadside tank has been used quite extensively on the Erie for a long time. The latter device is connected to the water main serving the tank, and a small amount of the water flow is diverted through the feeder, dissolving the chemical balls and carrying the solution into the water tank. It is also common practice to use small pumps, which are attached to and operated by the main water pump for delivering dissolved chemicals to the roadside tank, while there are various automatic methods for delivering sodium aluminate and its mixture to tanks and water columns through the use of water motors installed on the water mains.

Another method for treating only the water used in the boiler has been used for five or six years on the Chicago & North Western. The appliance employed consists of a container constructed around the locomotive branch pipe between the injector and the boiler check, and connected with the water in the branch pipe by a single tube. The container is loaded and closed before each trip and the surging of the water in the branch pipe serves to add a small amount of compound to the water as it passes. One of the advantages of this type of feeding is that the injector is not affected by any tendency to early precipitation. There are some 400 to 500 of these appliances in successful use, and the only difficulty reported is due to leaky boiler check valves which permit hot boiler water to get into the branch pipe and clog it with precipitate.

Still another appliance for this purpose is known as the locomotive water conditioner. It is an open-type feedwater heater with provision for the storage of 700 gal. of water heated to 210 deg. F. by the recovery of heat from the exhaust steam. The storage tank provides a means for the heat acceleration of any desired chemical reaction. Means are also provided for sludging out the precipitate before the water is pumped to the boiler. This device has the advantage of returning 10



Feeder for Adding Compound to Water in a Roadside Tank as Used on the Erie

per cent of distilled water to the engine tank and of removing more than 80 per cent of the oxygen dissolved in the cold water.

The most important points to remember in connection with the use of interior boiler treatment are that the results should be subjected to frequent chemical examination and that the best means of insuring accurate treatment is to regulate the supply by one of the automatic appliances mentioned above. Nothing can take the place of careful constant supervision.

THE GOVERNMENT OF ITALY, according to the Railway Gazette (London), has decided to electrify an additional 5,000 kilometers (about 3,100 miles) of the Italian State Railway system. The work contemplated, which is to be divided into three sections and completed within four years, includes electrification of main lines between Florence and Rome, Rome and Naples, and Naples and Salerno; of secondary main lines in the Venetian provinces, and of Piedmontese lines not already electrically operated. A 3,000-volt d. c. system will be used on the main lines south of Florence.

The Possibilities of Gas-Electric Locomotives

A discussion of their economic limits as compared with steam and a description of their adaptation in a particular case

By E. B. Walker

General Superintendent of Electric Lines, Canadian National, Toronto, Ont.

A NUMBER of gas-electric locomotives are now in daily operation in various classes of railway service, showing, in most cases, distinct advantages over the older type locomotives. Because the gas-electric locomotive can be easily designed to pull a 1,000-ton train at 10 miles an hour does not in any way mean that it would be equally satisfactory to design a locomotive to pull the same size train at 25 miles an hour and it is, therefore, of the utmost importance to ascertain, first, if the service required is definitely within the economic limits.

In considering the useful application of a gas-electric locomotive, it will be of advantage to study in a general way its own limitations and the limitations of the steam locomotive which it is proposed to replace. To assist in this consideration, two graphs are shown. The characteristic speed, tractive force and horsepower curves of similar sizes of steam and gas-electric locomotives are compared in Fig. 1 which is based on the curves of actual locomotives. The fuel costs at different percentages of loading, shown in Fig. 2, are based on limited data and are only representative. They serve, however, to illustrate quite satisfactorily the difference in efficiency between steam and gas-electric locomotives under varying load conditions. Fig. 1 indicates that the gas-electric locomotive has the advantage for slow

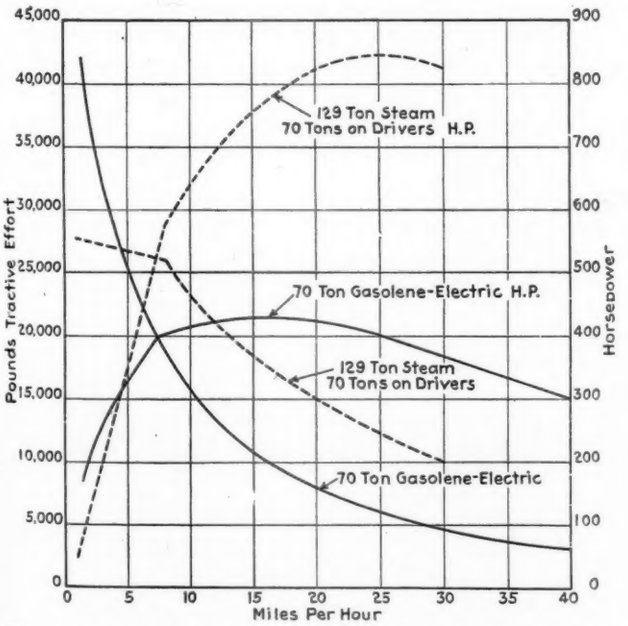


Fig. 1—Comparative Curves Showing Speed, Tractive Force and Net Horsepower at the Rail of Steam and Gas-Electric Locomotives

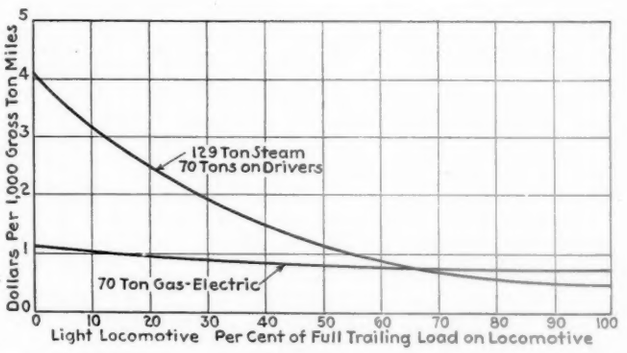


Fig. 2—Comparative Curves Showing Fuel Cost per 1,000 Gross Ton-Miles, Steam and Gas-Electric Locomotives

speed and high starting tractive force. For higher speeds with heavy loads, it does not compare favorably with the steam locomotives. Fig. 2 bears out the same conclusions. We can, therefore assume that where continued sustained effort with short stand-by time is required, the steam engine has the advantage, and that where intermittent service with periods of light and heavy loads, such as switching, the gas-electric has interesting economies to offer.

These conclusions are borne out by actual results on a short line about five miles long where a mixed freight and light passenger service is maintained. The freight service consists of switching and short haul, and for this the gas-electric locomotive is well adapted. As the passenger service consists of moving one coach only, the gas-electric is also satisfactory, as it has plenty of speed capacity at low tractive force. Had the passenger service consisted of five or six coaches instead of one, the locomotive would have been entirely inadequate, although it is capable of handling 16 freight cars at slow speed. It is, therefore, necessary to make a complete investigation of the proposed service before deciding to change from the older type of power.

On the line in question, a 35-ton Whitcomb locomotive has operated without trouble or interruption for about sixteen months and during that time has reduced the fuel cost by 65 to 75 per cent and at the same time performed every service that the steam engine performed with the additional advantage of elimination of smoke, a feature much appreciated by the residents of the town.

Standard Tested Units Used in Construction

One of the points stressed in deciding upon, in designing this locomotive was that every unit in its construction should be of standard and proved design, and that there should be no experimental features. The in-

corporation of experimental features in operating units is often a source of trouble. What the operator requires is a unit which will perform its service with a maximum of reliability and minimum of specialized attention. By selecting for this locomotive gasoline engines that were already in regular production, generators which were so standardized that they could be bought from stock, motors and trucks which had already given 20 years' good service, the requirements of the design were fulfilled, resulting in the satisfactory operation referred to above. In this connection, it must be remembered that the units employed are so simple in construction and operation that no electrician nor mechanic is required on the operating staff.

The net operating costs of such a locomotive depend largely on conditions governing the railway. If rules permit, there is no necessity for having more than one man on the locomotive, as the gas-electric design lends itself easily to the center-cab type with full visibility in every direction. If reasonable care is taken of the equipment, maintenance cost should be very low. The ordinary electric equipment is good for 20 years at least, and, in the locomotive under consideration, the motors have already seen 20 years of service and are apparently good for another 20. Motors in this class of service should be operated at a lower cost than in the ordinary electric locomotive. If the equipment is conservatively designed, the motors should be large enough so that they can absorb all the power developed by the gasoline engines without overheating, and the low average operating voltage, together with the small amount of power behind the generator, tends to increase the life of the machinery, as compared with an electric locomotive where large amounts of power can be drawn from the overhead wire, or third rail.

The life of the gasoline engine in this service has yet to be determined, but here again it is safe to forecast low costs. In the locomotive under discussion, the cost of the gasoline engines is about 10 per cent of the cost of the entire locomotive. For 5 per cent, therefore, a spare engine can be carried in stock and, as a defective engine can easily be lifted out and replaced with a new engine, it is possible to keep a spare engine in good operating order by carrying out major repairs in a more efficient manner on the bench instead of in the chassis.

As a matter of interest and comparison, two new engines could be purchased per annum for less than the cost of the annual repair bills for the steam locomotive which was replaced. It is difficult to estimate how often a complete engine overhaul would be required. The locomotive in question has operated 16 months and outside of spark plugs, cleaning carbon, etc., the only repairs have been two distributor gears, one magneto distributor cap and one valve. None of these defects caused interruption to the service. In the case of the distributor gears, the magnetos supplied ignition and when the magneto failed the distributor supplied ignition. In the case of the valve, the cylinder in question was missing, but did not interrupt service.

At a convenient moment, the local garage replaced the valve and cleaned the carbon, etc., for a labor charge of less than $5. This is interesting as it indicates how easily this class of equipment can be operated without special maintainers.

Operator's Influence on Fuel Consumption

The fuel consumption depends partly on the intelligence of the operators, and it was found that when they became used to shutting down the engine immediately for every stop of more than a few minutes' duration, there was a substantial saving in fuel and the ease of starting and stopping is such that there is no difficulty in making use of this feature.

Another feature lending to economy is the ability of the locomotive to handle all light loads on one engine. In actual results, this locomotive will handle 125 gross ton-miles per U. S. gallon of gasoline when the engine or engines are fully loaded. This, however, runs as low as 85 ton-miles per U. S. gallon for high speeds and light loads. The oil cost at present is about 8 per cent of the cost of gasoline. The rate of consumption, undoubtedly, will increase as the engines become more worn, but at present it averages about 85 miles per U. S. gallon.

One feature which may cause the operator to hesitate before purchasing a gas-electric unit is uncertainty as to its length of life. It would be hard to imagine, however, any type of railway power which is less subject to obsolescence. When it is remembered that the electric traction motor of today is not inherently better than that of 20 years ago, that trucks, wheels, locomotive frames and cabs are much the same, that electric generators and control equipment are not subject to any very rapid changes in design, it can be seen that 90 per cent of the locomotive should be good for many years. The engines will undoubtedly wear out, and marked improvements are being made from time to time in the design of internal-combustion engines. There is no doubt also that in the not too-distant future, the Diesel engine will be in commercial production at much lower prices and will eventually give as reliable and satisfactory service as the present gasoline engine. This, however, need not trouble the purchaser of a gas-electric locomotive. When it is remembered that engines represent about 10 per cent of the cost, it will be appreciated how inexpensive it will be to replace them as they wear out, with engines representing a later development.

The purchaser of a well-designed gas-electric locomotive need have no apprehension that it may be superseded in a short time by something so much better as to render it uneconomical to use. There is no type of locomotive which lends itself more easily to unit replacement. Any of the units, engines, generators, or motors, can be replaced without upsetting the function of the remaining units, and thus a machine once purchased may be maintained in good operating condition for many years without undue expense.

* * *

A London-Hook of Holland-Berlin Express Leaving Amersfoort, Holland—Netherlands Railways

Applying Automatic Interlocking

An explanation of the factors to be considered from the standpoint of train operation

By W. F. Zane

Signal Engineer, Chicago, Burlington & Quincy, Chicago

AUTOMATIC interlocking, one of the most recent and important developments in the signaling field, owes its popularity to three important characteristics: Safety of train operation, efficiency and simplicity of the equipment, and economies effected. Of course, the underlying reason for using automatic interlocking is the opportunity for effecting savings in operating expenses; train stops are eliminated at a crossing or junction not previously protected, while the application of automatic control eliminates the levermen at such a layout protected by a manually-controlled plant.

The savings to be effected vary with local conditions; the accompanying table, giving data with reference to 26 such plants now in service on several western roads, shows savings ranging from 27 to 364 per cent on the investment. Some other layouts have been analyzed, including some plants that have not shown so satisfactory economies or so desirable operating results, owing to operating conditions or ground problems that would be met more efficiently by the construction of a remotely-controlled plant. The economic possibilities of automatic interlockings were explained quite fully in the *Railway Age* for December 12, 1931. The purpose of this article is to set forth those phases of automatic interlocking, such as speed limits, methods of checking enginemen, and operating rules that are of special interest to operating officers.

Table Showing Economics Regarding 26 Installations of Automatic Interlockings Each Located at a Railroad Crossing

Plant	Installation Cost	Annual Savings	Per Cent on Investment
A	$4,222	$4,147	98.22
B	4,800	1,260	26.25
C	1,406	1,022	72.69
D	6,853	7,822	114.14
E	4,707	2,913	61.89
F	3,289	2,242	68.17
G	2,889	2,608	90.90
H	2,875	2,452	85.29
I	10,128	5,214	51.48
J	5,636	3,568	63.31
K	1,923	2,800	145.61
L	2,675	9,748	364.41
M	9,225	4,099	44.43
N	2,042	3,801	186.14
O	2,713	2,779	102.43
P	4,685	5,015	107.04
Q	4,250	1,761	41.44
R	3,573	3,000	83.96
S	3,545	1,610	45.42
T	2,884	2,027	70.28
U	5,000	2,727	54.54
V	3,825	3,764	98.41
W	3,500	4,878	138.51
X	5,475	5,482	100.13
Y	3,825	1,810	47.32
Z	4,345	3,769	86.74

The idea of automatic interlocking was conceived during the rapid development of automatic signal systems, especially the single-track absolute-permissive type. The satisfactory results obtained in the handling of traffic by automatic circuits and devices soon led to the thought that if speeding trains could be protected against head-on movements, the same principle could be applied to protect them from side-conflicting movements. Thus the absolute permissive and the normal-danger circuit principles were combined and so developed as to produce the present automatic interlocking plant.

The automatic interlocking is ideal for outlying crossings where there are no complications in the track layout; furthermore, marked progress has been made in designing controls to handle train operation where a limited number of turnouts and connecting tracks are involved. However, where switching moves are numerous, or where speed reductions are a hindrance to traffic, a manually-controlled plant, controlled either locally or from a remote point, may be preferable. Therefore, an operating officer and the signal engineer should make a joint study of each layout before deciding on the type of plant to be installed. Some of the important factors, from a train-operating standpoint, to be considered in planning an automatic interlocking are discussed below.

Speed Restriction and Location of Signals

The permissible speed through an automatic plant is an operating problem. The speed prescribed by governmental bodies, or, if they are not involved, the speed limit necessitated by operating requirements, is the governing factor in deciding upon the length and location of the approach operating circuits, the type of distant signal and other safety details of the circuits. In fact, the entire development of a safe plant is based upon the proper braking distances at determined speeds. The speed decided upon is secondary to the more important requirements that the restriction is positive and that violations are not countenanced.

The proper location of signals is essential in order to obtain flexible as well as safe and efficient operation. The preferable location for home signals is as close to the point to be protected as possible; this distance should be between 100 and 500 ft., depending upon the grade, curvature and the view. The nearer the signal is to the point protected, the less is the delay occasioned when trainmen are required to walk to the crossing to operate the plant with the time release by reason of the occupancy of conflicting track circuits, or a plant failure. Distant signals should be located at proper braking distance from their home signals, and where the speed restriction is not higher than 25 m.p.h. they may be non-operative, although for speeds above 25 m.p.h. it is much safer for them to be operative.

The control for automatic interlockings should be as simple as possible and yet embody fundamental safety features. Under all conditions, the only way that a route should be changed after a signal has cleared, should be for the train to complete its movement through the plant, or for the emergency release to be operated. In the event that the track circuit between home signals fails momentarily or is in a failed condition, it should cause the direction release relay to pick up, thereby plac-

ing proper signals in the stop position and causing trainmen to operate the emergency release before a train is permitted to complete its movement through the plant.

Derails, Smashboards and Recording Devices

In view of the fact that no leverman or other employee is regularly on duty at these automatic plants, the operating officers are especially interested in equipment used for checking enginemen as to train speeds and observance of signals. One of the fundamental purposes of a derail is to show whether enginemen overrun the home signal. However, the derail introduces a greater hazard than a benefit, a fact which was recognized by the Signal Section of the American Railway Association in a report in November, 1923, wherein it was stated that: "Derails shall not be used in main tracks, except where required by law or by decree of state public service commissions." Especially in view of the complications introduced by derails in automatic plants, this question has been given special study so that only one or two states still require the derail although a few other states insist on the use of its technical substitute, the smashboard. However, a large majority of the states require neither the derail nor the smashboard.

With reference to the smashboard, it may be said that the benefits derived from its use are very doubtful, because when broken it leaves only a visible record that some train has run through it while passing a signal indicating stop. The questions then arise as to the identity of the train that smashed the board and the speed at which it was traveling. Unless an accident has resulted, it is possible for any number of trains to pass through the plant after a smashboard has been broken and leave no evidence of their speed or the condition of the plant at the time of their passing. Also a smashboard adds much to the initial installation cost, as well as to the maintenance and operation expenses. Therefore, it is doubtful whether the results accomplished by a smashboard justify the expense.

Perhaps the most effective means of checking train speeds and the observance of signal indications at an automatic interlocking is the use of an automatic recording instrument. The necessity for such a recording device is debatable, but some states require it in lieu of details. One of these automatic devices makes a permanent record of the speed of trains passing through a plant. In such an instrument, pens rule straight longitudinal lines on the tape, making a side swing in the line when an electrical impulse is received from a predetermined point, such as each home and distant signal on each route. As these interruptions are received from definitely located points, the distance between them, when compared with the time recorded on the tape, shows the speed of the train. Furthermore, these instruments record the sequence of track occupancy and signal operation so that there can be no question as to which of two approaching trains had a clear signal.

Thus an automatic recording device produces a permanent record that will enable disciplinary measures to be determined much more safely than a derail and is more practical and efficient than the smashboard. In view of the thorough understanding of enginemen as to their responsibility for safe operation by signal indication, an automatic recording device may be considered as an extra expense not required at all plants.

Operating Rules

The rules for operating through an automatic plant, although essential, are not complicated. The signal engineer's chart, giving direction for the handling of the emergency release should be brief, but complete and clarified by diagrammatic illustrations. It should be framed in a weather-proof housing, located at the emergency release, and a copy should be affixed to the bulletin. This chart is not, in a true sense, a collection of rules, but rather a set of instructions.

There are, however, two operating rules that are pertinent to safe operation. The first prescribes speed restrictions, which should stress that the restrictions are in force when the engine or lead car passes over the crossing or other conflicting point which the plant was installed to protect. The other rule prescribes the method of flagging through the plant, when it is in a failed condition or when held by a train on a conflicting route. This rule should clearly provide that the conflicting routes shall be flagged in each direction and that trainmen shall determine the indication which the opposing signals are displaying.

It would be advantageous to standardize the rules covering the use of an automatic interlocking plant, and properly worded rules should become a part of the standard code because of the increasing number of such plants. These rules should be an adjunct to existing rules, and not a substitute for any part of the standard code. In their formation the demarcation between a rule and an instruction should be clearly defined.

I. C. C. Criticizes Purchases of G.M.&N. and Frisco Stock

WASHINGTON, D. C.

METHODS by which the St. Louis-San Francisco purchased 25,000 shares of stock of the Gulf, Mobile & Northern in 1929 and 1930 and the Chicago, Rock Island & Pacific purchased 25,000 shares of stock of the Frisco in 1930 are discussed and criticized in a report made public by the Interstate Commerce Commission on August 3 following an investigation of the purchases, although the commission found nothing unlawful in the transactions and ordered the proceeding discontinued. Commissioners Farrell and Tate dissented, objecting to the issuance of such a report when it showed no cause for action. The particular point of criticism is that E. N. Brown, chairman of the board of directors and of the executive committee of the Frisco and chairman of the executive committee of the Rock Island, had arranged for the purchase of the stock, verbally in the case of the G. M. & N., after consultation with members of the executive committee but without having brought the matters up at meetings of the boards or the committees, and that a considerable time elapsed before they were formally recorded.

"This proceeding shows," the commission said, "the easy manner in which the boards of directors of these railroads bore their responsibilities as such." Commissioner Farrell said he was unable to concur in the issuance of the report, "because according to my view, it does not show a violation of any law with which it is our duty to force compliance." Commissioner Tate said that the report is erroneous "either in that it does not go far enough or that it unjustifiably goes too far" and that "if it does not go far enough we are derelict in our duty; if it goes too far we are simply reading a lecture." "I do not find," he said, "that it is made a part of our duty, especially in days when we are compelled to economize in our printing, to get out a report which does nothing but purport to tell the gen-

eral public about something which has already happened and which we impliedly, if not in fact expressly, find constitutes no basis for any legal action." He added that the authority in the law to the commission to inquire into the business of common carriers was to "keep *itself* informed," but that "at a time when it may be said to be generally known that the carriers are struggling for their very existence, the report simply says that we would not have had certain carriers or certain officials thereof do as they did."

After reviewing the testimony taken at the hearing the commission's report says:

The disclosures by the evidence in this proceeding bring to public attention a practice in conducting the business of railroad corporations that merits condemnation. Stockholders of corporations have certain functions to perform and the right to establish by-laws is one that is essential and important. Obviously the power to make by-laws would be valueless if such rules are not observed in the conduct of the business of the corporation. The narrowing of the authority of thousands of stockholders, first to a board of directors, then to an executive committee, and finally, in practical effect, to an individual member who confers separately and more or less incidentally with certain other members before taking action for the corporation, constitutes a dangerous departure from sound practice in corporate management. While in the nature of things it is necessary that the business of corporations be delegated to boards and even to individuals, it is essential that all reasonable effort be made to preserve the representation of the stockholders to the full extent required by the regulations adopted by them. It seems clear that the by-laws of both the Frisco and the Rock Island, as elsewhere quoted, imply, if they do not direct, that action taken by an executive committee in behalf of the corporation shall be considered at regular meetings or at special meetings. However, here we are concerned not so much with the legality of the procedure adopted as with its bearing upon the public interest. It is hardly necessary to refer to the advantages of consideration of proposed transactions at a representative meeting which shall give opportunity for interchange of views and discussion, lessening the possibility of undue personal influence, misunderstanding, and misrepresentation. We are unable to attach material weight to any theory that danger of premature disclosure of plans can justify failure to apprise all of the members of an executive committee of proposed transactions having an important bearing upon the policy of a railroad company as well as upon its finances; or that such danger is sufficient reason for dispensing with a committee meeting. Each member of the committee should be considered worthy of trust or should not be retained in his position. In the case of the acquisition of the Frisco stock by the Rock Island, in particular, it is noteworthy that the chairman of the executive committee failed to consult at least one member who was particularly qualified by experience as well as by mature study of transportation questions to pass upon the wisdom of the proposed purchase, not only in the interest of the corporation but from the standpoint of the relation of the transaction to the public welfare. In his testimony the chairman emphasized the assertion that his failure to consult all of the members of the executive committees in these instances was not due to any distrust of the members not consulted.

Another noteworthy feature of the record is the acknowledgment by officials and directors of the Frisco, that notwithstanding the long-existing interest of the Frisco in the Gulf, Mobile & Northern and a knowledge of its advantages as a possible outlet to the Gulf, they were practically ignorant of the activities of the Gulf, Mobile & Northern in acquiring a through route between the Gulf and the Ohio River with the express purpose of forming a connection with the Chicago, Burlington & Quincy at Paducah, Kentucky. Those activities were dealt with in a series of our reports.

The proceeding shows the easy manner in which the boards of directors of these railroads bore their responsibilities as such. Questions of large financial importance to the properties and to the stockholders to whom they stood in a fiduciary relation were decided by a few of the members in casual conversations; large sums were expended or obligated on projects which, as a board, they had not considered and which, on the transactions being reported to them later, they readily ratified.

The Frisco since 1926 has held a large block of Rock Island stock. Whether in view of that fact and otherwise, it was financially a sound policy for the Rock Island to start a buying campaign in Frisco stock, obviously presented questions on which the best available financial acumen in the board might have been utilized. The objections to such a policy might well have been developed in any board discussion. In each instance the board ought to and no doubt would have been interested in a policy looking to a close alignment with another carrier even aside from the direct financial obligation involved. Stockholders have a right to expect competent conduct of corporate affairs. Directors who merely ratify without investigating large transactions engaged in on their behalf without their knowledge, are likely to disappoint such an expectation.

The casual way in which the Frisco board allowed the business of the corporation to be conducted is especially striking. A verbal request was made by the chairman of the Frisco, November 21, 1929, that Speyer & Company buy 25,000 shares of Gulf, Mobile & Northern stock. No limit on the cost was suggested. Purchases were completed April 22, 1930. Yet no written communication of any sort was exchanged at the beginning, during the course, nor at the conclusion of the purchasing; nor does any margin appear to have been deposited or interest demanded on the sums advanced. The first writing in any way relating to the transaction was the letter from Speyer & Company, dated December 9, 1930. On December 10, 1930, the purchase, for the first time, was reported to the Frisco board. It was approved the same day.

It thus appears that for many months an obligation, or what was considered to be such by the board when it officially learned of the transaction, of approximately $1,000,000 was outstanding without any record in the books of the Company, and without any knowledge of it by the board responsible for the conduct of the Company's affairs.

It is said that there was necessity for secrecy; that if the approval of the board, or even of the executive committee, had been sought, the facts would have leaked out and prices would probably have gone up. The merits of this consideration we have discussed. Clearly, it had little relevancy during the period of seven and one-half months between the date of completion of purchasing and the date of written notice of the transaction and report to the board. That the danger was not great is indicated by the fact that the $1,000,000 investment had shrunk in market value to about one-third of that sum before it was reported to and ratified by the board.

Hoover Seeks Way to Induce Railway Spending

WASHINGTON, D. C.

PRESIDENT HOOVER and members of his Cabinet are trying to work out a plan for utilizing the resources and loaning power of the Reconstruction Finance Corporation, as augmented by the recent passage of the "relief" bill, to revive the purchasing and employing power of the railways as part of a general program for stimulating employment and business.

At the present stage of the negotiations the problem seems to be to arrange for terms on which the railways can afford to borrow large additional sums, beyond those they are already borrowing from the government and other sources to avert receiverships, at a time when they have a surplus of facilities and equipment in storage and their earnings are so low that many of them are having great difficulty in meeting their present interest requirements. However, many conferences are being held in an effort to overcome the obstacles and many minds are at work on the problem as to how the desired results can be accomplished.

Because definite conclusions have not yet been reached those taking part in the conferences have been reticent about discussing the matter and the only public announcement so far made was that issued by the President on July 29, when, as part of a statement outlining the subjects of various conferences that had been held in the

preceding two weeks "in respect to organizing concerted action along the front of economic recovery," he said:

"Preliminary conferences have taken place with some of the railway leaders with a view to their developing programs for increased repair and maintenance in co-operation with the agencies of the government for the purpose of expanding railway employment and for expansion in orders for railway supplies and equipment which would also be immediately reflected in increased employment in the supply and steel industries."

This announcement followed a conference held the day before at the office of the Secretary of the Treasury, Ogden L. Mills, attended also by the Secretary of Commerce, Robert P. Lamont, the new chairman of the Reconstruction Finance Corporation, Atlee Pomerene, and a group of railway executives: W. W. Atterbury, president of the Pennsylvania; Ralph Budd, president of the Chicago, Burlington & Quincy; W. R. Cole, president of the Louisville & Nashville; Hale Holden, chairman of the Southern Pacific, and Daniel Willard, president of the Baltimore & Ohio. Mr. Willard and R. H. Aishton, president of the American Railway Association, had also been at the White House earlier in the week.

On August 2 there was a further conference with the directors and officers of the Reconstruction Finance Corporation attended by Mr. Willard and several railway accounting officers, the members of Division 4 of the Interstate Commerce Commission that handles railway loan applications, and Oliver E. Sweet, director of the commission's Bureau of Finance, Division 4 as at present constituted consists of Commissioners Meyer, Mahaffie, and Lewis, as Commissioner Eastman is on vacation.

Chairman Pomerene said afterward that the conferences were being held to discuss plans for putting men back to work by making loans to the carriers for reconditioning of rolling stock, maintenance work, and possibly by purchases of new equipment to replace some of the older units. A committee of the directors of the Finance Corporation including President C. A. Miller, H. C. Couch, and Jesse Jones was appointed for further study of the subject and conferences were resumed on Wednesday.

At the Wednesday morning conference there were present Mr. Willard, George M. Shriver, senior vice-president of the Baltimore & Ohio; A. J. County, vice-president, and George H. Pabst, Jr., treasurer, of the Pennsylvania; and C. I. Sturgis, vice-president of the Chicago, Burlington & Quincy, the Interstate Commerce Commissioners, the directors of the corporation, and Secretary Mills. Secretary Mills said that some progress was being made but that further meetings would be required and probably a general meeting of the railway executives.

It has been apparent for some time that President Hoover has been anxious to have the railways make greater use of the loan funds available through the Finance Corporation, but most railroads, in view of their present situation, and recalling the extent to which their resources were depleted by the heavy program of capital expenditures which they undertook in 1930 at the request of the Administration, have shown reluctance to borrow any more money than they had to, while the commission has also induced many of them to revise their applications downward and some have had difficulty in persuading the commission as to their needs. On the other hand it is now being pointed out to them that if they can do anything to help the general economic situation it will help promote business and the increased traffic which they need.

Among the obstacles to a greater resort to government funds are the interest rate which so far has been charged by the corporation, 6 per cent on railway loans, although loans to banks for shorter terms have been made at 5½ per cent. The government has been making loans to promote shipbuilding at the cost of money to it. Another is the question as to how they are to furnish collateral that would be satisfactory to the government, since some of the roads have been rather hard-pressed to find unpledged assets for the loans already made. Another is the effect on their operating accounts of an increase in maintenance expenditures which would deplete net operating income already insufficient. It is understood that in the latter connection the idea has been discussed which was advanced in 1930 when the commission authorized the Chicago & North Western and the Missouri-Kansas-Texas to defer charges to operating expenses for heavy repairs to equipment made for the purpose of giving increased employment to shop forces by waiving the requirements of its accounting rules so that the charge might be put into a suspense account and made when the equipment was actually put into service.

It is understood that President Hoover had hoped for more results in the way of increased business and employment when the Finance Corporation was first organized and was perhaps somewhat disappointed when it turned out that so large a proportion of the loans applied for by the railroads was for the purpose of meeting debts already incurred by paying bank loans and other maturing obligations and for such pressing requirements as interest, taxes, overdue accounts, etc. Moreover, it was found that it would be necessary to depend upon the resources of the corporation to a greater extent than had been expected for the item of interest, after it became apparent that the Railroad Credit Corporation would not be able to take care of as large a proportion of such requirements as had been estimated. About $47,000,000 of applications to the railroad corporation had been withdrawn up to August 1, although the carriers have to pay a much greater interest rate on loans from the government than from their own agency.

Up to August 1 the commission had approved loans to railroads from the Reconstruction Finance Corporation amounting to approximately $240,000,000, on applications which as filed amounted to over $450,000,000 but which in many cases were subsequently reduced. While the money loaned has undoubtedly been very widely distributed only a small part of it has been devoted directly to providing new business or employment and some railroads have withdrawn applications for loans for additions and betterments.

The conferences with the railway officers have been only part of a series of conferences held with representative groups in other lines and the President stated that when the program is more fully developed he would confer with the business and industrial committees in each federal reserve district and other groups that are primarily interested. He said that the subject of organized co-ordination of the wider expansion of credit facilities to business and industry had been taken up particularly for the purpose of supplying full credit for production where consumption of goods is assured with a view to materially expanding employment which has been hampered by dislocation of the credit machinery.

The President has also had under discussion with various agencies the question of a movement further to spread existing employment through reduction of work hours, and this week has been conferring with a committee from New England along those lines. It is reported that he plans to call a general conference on the subject.

Delaware & Hudson Wage Plan

Mileage basis done away with for train service employees—Now paid on monthly basis

FOR several years the Delaware & Hudson has been making determined efforts to stabilize employment for all its forces. The numerous and complicated articles in the agreements with the train and engine service brotherhoods, however, made it difficult—indeed almost impossible—to make much progress with that group. After long study and negotiation the efforts with these employees began to bear fruit early this year and culminated late in July, when the trainmen, the last of the four brotherhoods to accept the agreement, approved of the new plan, effective August 1.

As stated in the new rules the "agreement is experimental and is entered into for the period of one year. Some of the provisions are a distinct departure from the practice that has obtained on this railroad for a number of years. The parties hereto have entered into this agreement with the honest belief that it will prove to be of benefit to both the employees and the corporation. Both parties agree to make a strenuous effort to insure its success. If either party is not satisfied with the agreement in its entirety, or in part, it is agreed that upon the expiration of the trial year either party shall have the right to petition the other party to enter into negotiations for the purpose of revising objectionable features. If these negotiations do not result in a satisfactory agreement, both parties agree to return to the agreement in effect on April 30, 1932."

The enginemen were the first to accept the new plan, and it became effective with those employees on February 1. The conductors followed on February 15, the firemen on June 16, and the trainmen on August 1.

The following extracts are taken from the agreement with the Brotherhood of Locomotive Firemen and Enginemen and are typical of the plan in effect for all the organizations:

Hours of Service

Two hundred and forty hours shall constitute a months' work for all regular firemen in the service. Firemen who are available during the entire month but are not furnished with sufficient work to make up the 240 hours will, notwithstanding, be paid the monthly rate specified herein for 240 hours' service. When regular firemen have completed 240 hours' service in any calendar month, they will be relieved from further service during that month. If for some reason it is necessary to require them to work more than 240 hours during any calendar month, they will be paid pro rata for the additional hours worked. Not less than 8 hours will be credited when firemen perform service they are called for on any day or trip. The time for which firemen will be paid shall begin when they are required to report for duty and end when they are relieved.

One hundred and sixty hours shall constitute a month's work for all extra firemen in the service. Extra firemen who are available during the entire month but are not furnished with sufficient work to make up the 160 hours will, notwithstanding, be paid the monthly rate specified herein for 160 hours' service. Extra firemen who are required to work more than 160 hours during any calendar month will be paid pro rata for the additional hours worked.

Rates of Pay

Rates for firemen shall be as follows:

Passenger and Milk Service:	
Through service	$225 per month
Short turnaround service (no single trip of which exceeds 80 miles)	$215 per month
Freight Service:	
Engines weighing 250,000 lb. on drivers or more	$225 per month
Engines weighing 200,000 to 250,000 lb. on drivers	$215 per month
All other classes of engines	$200 per month
Yard engines	$190 per month
Extra firemen	$150 per month

Hostlers

Two hundred and forty hours shall constitute a month's work for all regular hostlers and hostler helpers in the service. Hostlers and hostler helpers who are available during the entire month but are not furnished with sufficient work to make up the 240 hours will, notwithstanding, be paid the monthly rate specified herein for 240 hours' service. When regular hostlers or hostler helpers have completed 240 hours' service in any calendar month, they will be relieved from further service during that month. If for some reason it is necessary to require them to work more than 240 hours during any calendar month, they will be paid pro rata for the additional hours worked. Not less than 8 hours will be credited when hostlers or hostler helpers perform service they are called for on any day or trip. The time for which hostlers and hostler helpers will be paid shall begin when they are required to report for duty and end when they are relieved.

Extra hostlers and hostler helpers will be paid a pro rata allowance based on established rates for all service performed.

Rates for hostlers and hostler helpers shall be as follows:

Road hostlers (who handle engines between passenger stations and roundhouses, or yards, or on main tracks)	$195 per month
Hostlers	$175 per month
Hostler helpers	$155 per month

Supplementary Regulations

Miscellaneous service.—Firemen attending court or inquest as witnesses for the corporation, or when assigned to similar duties, will be allowed time consumed, with a minimum allowance of eight hours if the time consumed in a 24-hour period amounts to less. The allowance will be credited to make up either the 240 hours per month for regular men or 160 hours per month for extra men. Men so engaged will be allowed necessary living expenses; witness fees and other allowances will be turned over to the corporation.

Deadheading on company business will be considered regular service when ordered by the proper officer.

Called and not used.—When firemen are called, report for duty and are relieved before performing service, they will be credited with an allowance of two hours and will hold their regular turn out. If one or more hours' work is performed in preparing engine for service, they will be credited with an allowance of four hours and will stand first out.

When time claimed by a fireman is not allowed, he shall be promptly notified in writing and reason given why not allowed.

Seniority date.—Promotion and the estabishment of a seniority date as firemen as provided herein shall date from the first service as fireman, when called for such service.

Reduction of force.—When from any cause it becomes necessary to reduce the number of firemen, firemen who are taken off will be given work in roundhouse or shops when possible. When reductions are made they shall be made in reverse order of seniority. When firemen are laid off account reduction in service, provided they return to active service within 30 days from date their services are required, they will retain all seniority rights.

Rest period.—Firemen on duty less than fourteen hours will be given eight hours' rest. If on duty more than fourteen hours, they will be given ten hours' rest, except in cases of wrecks, washouts and other like emergencies. If on duty six-

teen hours, ten hours' rest from time of registering off duty is required.

Held away from home terminal.—Firemen in pool freight and in unassigned service held at other than home terminals will be credited with continuous time for all time so held after the expiration of 16 hours from the time relieved from previous duty. If held 16 hours after the expiration of the first 24-hour period, they will be credited with continuous time for the next succeeding 8 hours, or until the end of the 24-hour period, and similarly for each 24-hour period thereafter.

Transfers of men.—In case of a shortage of firemen on one division of the road and a surplus on another, the junior fireman will be transferred unless a senior man claims the right to go.

It is understood that when men are transferred under this Article, they are to be returned to their home divisions as soon as business permits, unless they desire to remain; in such cases they must so declare within thirty days and will waive all rights to seniority on home divisions; in case of a surplus of firemen at one terminal and a shortage at another, the junior fireman will be transferred unless a senior man claims the right to go. As soon as conditions permit, these firemen will be allowed to return to their home terminal.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended July 23 amounted to 501,130 cars, a decrease of 2,964 cars as compared with the previous week. This was a decrease of 241,351 cars as compared with the corresponding week of last year and of 418,171 cars as compared with 1930. Coal loading increased about 6,000 cars as compared with the previous week and forest products and merchandise showed slight increases but all other commodity classifications showed reductions. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading

Week Ended Saturday, July 23, 1932

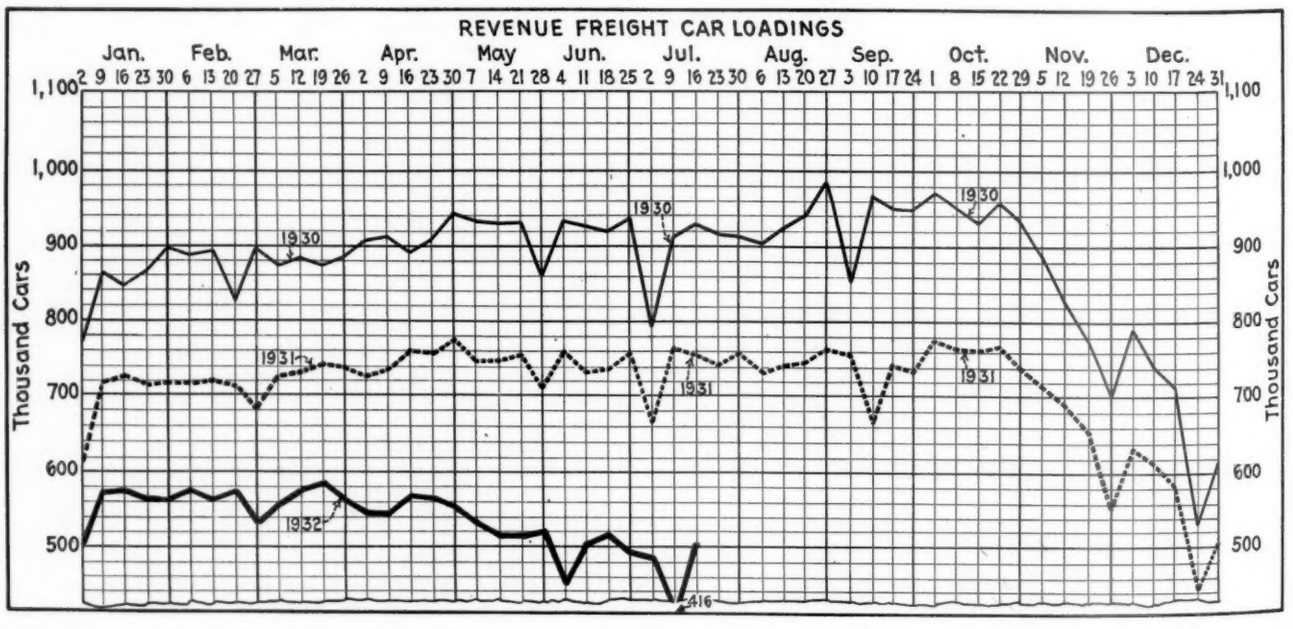
Districts	1932	1931	1930
Eastern	113,391	162,456	204,485
Allegheny	94,264	146,017	183,277
Pocahontas	32,643	46,223	54,178
Southern	71,235	104,181	122,101
Northwestern	60,258	106,551	142,161
Central Western	85,849	115,512	140,618
Southwestern	43,490	61,541	72,481
Total Western Districts	189,597	283,604	355,260
Total All Roads	501,130	742,481	919,301
Commodities			
Grain and Grain Products	41,171	52,846	63,627
Livestock	14,287	18,310	18,772
Coal	76,706	112,168	140,737
Coke	2,474	5,055	8,280
Forest Products	15,544	27,133	41,607
Ore	6,620	35,848	60,381
Merchandise, L. C. L.	167,325	212,115	230,970
Miscellaneous	177,003	279,006	354,927
July 23	501,130	742,481	919,301
July 16	504,094	757,989	928,271
July 9	416,950	762,444	915,985
July 2	489,273	667,630	792,053
June 25	498,799	759,363	936,690
Cumulative Total	15,534,318	21,283,399	25,980,431

Car Loading in Canada

Light shipments of grain from the western division was the chief factor in reducing Canadian car loadings for the week ended July 23 to 36,687 cars as compared with 37,743 cars for the previous week. The index number of 60.29 was a new low for the year and was also lower than for any week in 1930.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada		
July 23, 1932	36,687	16,017
July 16, 1932	37,743	15,948
July 9, 1932	39,053	13,921
July 18, 1931	48,060	22,223
Cumulative Totals for Canada		
July 23, 1932	1,188,612	575,082
July 18, 1931	1,398,491	781,027
July 19, 1930	1,707,897	1,005,685

A NEW TYPE BUFFET-OBSERVATION-LOUNGE CAR was placed in service on Tuesday, August 2, on the Central of New Jersey train leaving Liberty street, New York, at 3:40 p.m., eastern standard time. This new Pullman car also becomes a part of train No. 3310, which arrives in New York from Point Pleasant, N. J., Asbury Park, Red Bank and intermediate points every morning at 8:08 a.m. Included in the car are a special buffet section, where tea and dinner may be enjoyed on the afternoon trip and breakfast on the morning, or return, trip; an observation section, and a parlor lounge. The car seats 42 people.



Railroads a Factor in Industrial Development*

Carriers should be permitted to do what is necessary to meet changing conditions of transportation

By H. R. Safford

Executive Vice-President, Missouri Pacific Lines, Houston, Tex.

THE part that the railways play in the industrial development of the United States is not a minor part and I believe it to be in effect an axiom of the economics of industrial and commercial development that rail transportation is the main factor in that development. It is a universal expression that this form of transportation is the backbone of our national and state growth.

It is interesting to see a measure of the proportional value of the influence of rail transportation upon commodity values. In 1929, for example, the total value of all goods in the United States, I mean goods available for trade, was $96,470,000 and this volume was transported to the extent of 650,000,000,000 tons moved one mile by the various transportation agencies, of which 75.8 per cent was moved by rail, 16.3 per cent by barge, 4.9 per cent by pipe line, 2.5 per cent by truck and 0.5 per cent by electric lines and air.

Please recall that of a total value of goods of $96,470,000,000, the cost of transportation by rail was 6.6 per cent, in other words one-sixteenth of the total value was spent for rail transportation—not an excessive proportion when one recalls that nearly all of those goods would have had no value unless they were moved somewhere because there would be no local use for them. It is logical to assume that 6.6 per cent is a small amount to pay for creating about 93.4 per cent of the total wholesale value.

This, as I see it, is the starting point in thinking about railway transportation, what it means to the country and what the value of it is to the community and to the nation. There can be no doubt that it is a state question to consider the problems of this industry to which so many are turning their attention, especially under existing conditions, and be it said to the credit of the American people that they are thinking of them just as you are today.

A Developer of New Territories

Every human being in this country is the beneficiary of transportation. Our whole national life, industries, jobs and homes depend on continuous transportation service. The public is not willing that transportation service shall become a plaything of militant groups. The public has definite rights which must be respected. Let us analyze briefly and yet in more detail just what this influence is in the various phases of state and national development.

Begin with the virgin territory, of which we have so much, and look for a moment at the typical cases of territorial development that have been within the observation of all of us within the short span of 15 to 25 years. Recall, for example, the rapid construction of railway mileage in northern and western Texas, in south Texas and the Rio Grande Valley and other territories which have been thrown open to the colonist, the promoter, the industrialist and the distributor, and ask the question, "Would the highway, the inland waterway or any other agency have been a pioneering operator?" I think everyone will agree that the answer will be, "No." It has been the railway that has been the opening agency and I believe that such will be the continuing situation unless a condition should arise that would so discourage investment as to create a cessation of progressive rail policy. I can conceive no substitute agency for other competitive forms of transportation are not of a type to answer the unusually severe demands of pioneering, of opening up national resources and bringing in mass movement.

Competitive transportation agencies so far have not generally ventured into the undeveloped area. They have, as a rule, operated only in proven fields. The taxing capacity of the public for many years will not permit any change in this situation just outlined and if this is correct, then the railway will be the dependable and the only dependable agency for this assistance to territorial development. In the second phase of the subject, and passing to the period after pioneering, when we have reached the point of orderly and well-sustained commercial and industrial existence, what part then does the railway play in industrial growth?

As a taxpayer, it is a permanent and substantial contributor to wealth and employment because its entire physical structure is permanent and must be maintained, and that maintenance represents wages and materials produced with local employment.

As a part of community life, it is an interlocked member of the whole business structure, with its extensive organization for research in agriculture as well as in industry, and it is co-operating with all forms of business activity. It is through its efforts that industrial development is created by assisting prospective industrialists in securing proper locations with reference to transportation and through the agricultural department increased production is maintained. Experts in their respective fields are constantly co-operating with the producer in creating additional and better products for market. This cannot be said of any of the competitive agencies.

There is rapid evolution in all things—it seems like the processes of evolution are increasingly rapid and no less interesting on that account. This is particularly true of transportation. Some critics will say that the railways have failed to recognize and adjust themselves to

* From an address before a meeting of industrial leaders held under the auspices of the Bureau of Business Research of the University of Texas.

the new order of things. Superficial observers will make that assertion, but I cannot agree because there is no business that is more competitive than the railway business and that competition has brought efficiency in operation to the benefit of the user. Let us look for a moment at some results. To begin with, the railways have expended since the year 1920, over $8,000,000,000 for improvements, or 43.6 per cent of the tentative value set by the commission following the passage of the Transportation Act. The public bought the securities issued for these betterments. The public would not have done so if there had not been marked confidence in the administrative and development policies of the railways.

In the period since 1920, the cost of freight transportation for 1,000 revenue ton-miles was reduced from $5.35 to $3.52, a saving of $1.83 or about one-third. The amount of fuel required for locomotives was reduced from 197 lb. to 138 per thousand gross ton-miles, or 29 per cent. Freight cars were moved 40 per cent more miles per day. Casualties were reduced by 36 per cent. The schedules of freight trains have been increased in the preferred service from 25 per cent to 50 per cent, making it possible to save the shipper and consignee storehouse investment and stock.

Statistics are tiring and I would not burden you with them, but these are only typical. We all know the gradual and yet somewhat rapid improvement of passenger equipment and we also know how rapid has been the growth of the use of the highway, yet these improvements were made in a constant desire to cater to the user's wishes.

Need National Policy for All Forms of Transportation

Conceded, on the other hand, that there is a reasonable and economic function to be performed in the public interest by certain competitive forms of transportation, such as the feeding or lateral auxiliary movement on the highway; or that some distribution, for speed reasons, is sound; or that the major water routes which may be utilized without uneconomic expenditures may be used; or that certain speed requirements met by airplanes may be proper and, I think, them to be so. The problem then before the public is to recognize and at the same time to restrict the use so that there will be no unwise burden, taken in the aggregate, concerning transportation. But these questions cannot be analyzed in great detail by the great proportion of citizens for obvious reasons. The thing that interests us is the part the railway must play in the time to come in continuing to be the most desired stimula to industrial development and economic equilibrium.

As citizens we are interested in national and state policies, not only toward railways but all forms of transportation. We are interested in the proper economic sphere of each form and how it will be both regulated and protected. We are interested in the preservation for posterity of the investments which have been encouraged and made by the public with a confidence not only in the institution itself but in the government which has prescribed the methods of control and regulation.

The total annual income of the people of the United States in 1929 has been estimated at $78,000,000,000. Of this total income, 9.6 per cent went for rail transportation and 16.2 per cent for motor vehicle transportation.

In the wildness of rapid expansion and of unparalleled prosperity we forget our objectives. We are apt to lose perspective. We have before us today in the railway problem, as I see it, the following basic things: First, I believe there is a deep-seated feeling on the part of the public that the railways shall continue as a properly regulated industry—encouraged and protected to the point of maintaining credit and regulated to the point of maintaining keen enterprise and strong and ethical competition; second, that any form of subsidized competition must be based upon the theory that fairness shall prevail in all things that influence conduct and policies; third, that the railways be permitted to do what is necessary to meet the changing conditions of transportation which have materially altered our whole system of distribution.

We have seen in Texas a pronounced step in the regulation of motor industries. It is a step that I believe, while not yet an ideal situation, should be tested because I believe it represents a clear cut wish of the public to secure a better state transportation policy. To complete the picture, another step is necessary to stabilize the situation and that is federal legislation affecting carrier operation on both land and water, which has for its purpose not only the preservation of the railway in its true and major place in industrial development, but the prevention of discriminatory influences in community competition and in the changing conditions which have progressed so rapidly within the past few years. Since the railway is being called upon to change its structure and to become adjusted properly to meet changes, congressional and legislative cooperation is necessary.

THE LONDON & NORTH EASTERN (Great Britain), according to the Times (London), includes in its timetables a sign to show at which stations its trains connect with highway motor services. In timetables for some of its divisions this information is now supplemented by a map which, in addition to the usual plan of the railway, includes the more important roads, with contact stations between road and rail services and routes followed by road companies allied with the L. N. E. clearly indicated.

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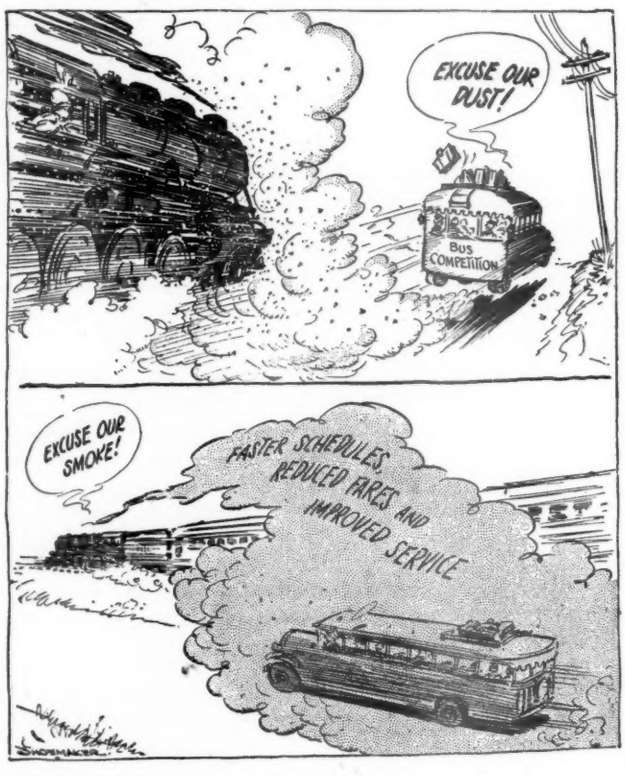

Chicago Daily News

Turn About Is Fair Play

Communications . . .

Railroad Men Must Become Active in Politics

MOBILE, ALA.

TO THE EDITOR:

In 1928 the country was advised to keep religion out of politics. Religion was thrust forward, and helped to defeat a candidate for President. Railroad management has kept out of politics. Railroads have no friends in either party. They can be no worse off if they come out openly and support either of the parties. Should they decide on this course and follow it to the end the politicians will try in every way to secure not only their support, but the support of those who ally themselves with the railroad interests. The railroads have nothing at the present time to trade to the politician. With the proper organization they can present more than the politician can offer them. They have been too passive, catching what fell in their direction. Without a proper political organization the conditions to which they have been subjected will be continued. If they are continued it will be because of the shortsightedness of railroad management.

The trepidation with which railroads have viewed opposition in Congress is carefully recognized by the various castes of politicians to be found in that notorious body of racketeers. They seem to realize, as clearly as do the railroads, they have them beaten. Illustrate, by the organization of railroad employees and their friends, that something better is expected for railroads in the future and Congress will stiffen up like a frozen garden hose, change her attitude and wheedle the railroads to a much greater extent than they have abused them in the past.

Railroads have been asked to help associations of employees to combat existing conditions and abuses of the railroads. This help has been flatly refused. Officers of railroads have conceived the idea that it would be unethical to do anything to assist such organizations. They are afraid to permit any intimation of sanctioning, aiding, or abetting them, or to permit the use of their names. Because they are afraid some hardboiled member of Congress will offer something inimical to railroad interests.

Why the railroads will continue to pursue the phantom of hope, is beyond the concentration of mere brains. They need a real leader, and one of the most militant character. There is not such an individual in the railroad world at this time, or he would have come out into the open fighting mad long ago, and made some attempt to roll back the clouds from the field of railroad investments, railroad employment and secured a fair deal from the top of the deck.

My dear editor, since your publication is read by every railroad president in the country and you have made it a power within the realm, the necessity for organization should be made your keynote. Inject some real backbone into the railroad world. It needs it badly. An organization of railroad employees, including every officer from the president down, with the mere statement that railroads, like religion, are in politics and intend to stay, will do more to correct small bore politicians of the Brookhart type than millions of your splendid editorials which are wasted on the profane atmosphere in the office of the railroad officer.

R. S. HIERYONAMOUS.

[The railways and their employees have friends—not enough, but some—in both political parties. On a national basis the platform of neither party is entirely satisfactory. The place to fight this battle is in the individual constituency, state or federal, and regardless of party. We should like to see a thoroughly aroused and active organization of railway employees and all their friends in every legislative district and every Congressional district in the country—an organization large enough and vocal enough to convince any candidate that it was a force which might elect or defeat him. After all, the public man is human. There is every reason in human nature why he should protect the interests of those who are loyal to him and ignore those who fail on election day to reward his efforts in their behalf. We agree with our correspondent that railroad men have been entirely too timorous and lackadaisical about such matters in the past. Now their backs are against the wall and they have got to show fight or perish. Every man and woman who depends directly or indirectly on the railways for a living should join them.—EDITOR]

Central Research Bureau Advocated

CANTON, OHIO.

TO THE EDITOR:

The need for a central bureau for railway research is unquestioned. Why it was not founded years ago is one of those inexplainable things. An industry as large and as varied as a railroad must certainly require a central department where work of this sort can be carried on efficiently, economically and where the results of research and tests can be disseminated to the members of the American Railway Association without color or prejudice.

Therefore, we believe in a central research and test bureau sponsored by the American Railway Association and conducted along lines similar to the Bureau of Standards at Washington, D. C.

Under the present practice, long-extended tests of materials or devices are many times conducted haphazardly for the reason that the railroad does not possess the personnel or equipment necessary to follow up the test in a proper manner so that complete information can be obtained as to the merits or demerits of the item under test. As a result, most tests are meaningless, even on roads where service tests are run and the time and money expended are in many instances wasted.

On the other hand, with the establishment of a central bureau efficiently equipped and properly managed, the supplier would be charged a fee sufficient to cover the cost of any test he desired made and at its conclusion a true and unvarnished record of such a test would be furnished to the suppliers and all members of the A.R.A., thus eliminating the necessity for further tests on other roads and thereby saving both the railroad and the supplier a large amount of time and money. In view of the fact that the bureau would charge for any services rendered to either supplier or railroad, we believe that the maintenance expense of the bureau would be covered.

Another very important function of the bureau would be in the direction of standardization of materials. Uniform specifications covering various classes of materials would supplant the present conflicting specifications as applied to the same class of materials. Research into all branches of railroading could be conducted more efficiently and economically than under the present practice by the concentration of such work under the direction of the bureau chief.

It does not seem fair, under present practices, for a reputable supplier who has spent large sums of money perfecting a device, to be compelled to prove its merits on every railroad by service tests of same. Any official report issued from a responsible department of the railroads should serve as ample proof, after test, of its merit and thus enable the railroad to profit by its use, years in advance of the now-existing custom.

Finally, suppliers who are charged for tests so conducted, will hesitate to submit materials or devices for test until they have perfected them to a point where they have confidence that the products offered will be given a favorable report. This will eliminate experimental tests by the railroads in order to show up the "bugs," which has resulted in considerable cost to the railroads and made harder the work of the reputable supplier to market his wares.

IRVING H. JONES,
President, Allied Railway Supply Association.

Odds and Ends . . .

Heavy Traffic on the Katy

The shipment of a huge piece of refinery equipment, known as a fractionating column and used in the manufacture of gasoline, afforded a practical proof of the right of the Missouri-Kansas-Texas to be known as a heavy-duty railroad. The shipment, on its way from Sharon, Pa., to Houston, Tex., was handled by the Katy between St. Louis and its destination. Two well cars were required in the movement of the column, which had a length of 69 ft. 5 in., a height of 16 ft. 11 in. above the top of the rail, and an extreme width of 12 ft. 2 in. The weight was 145,000 lb.

This Week's Prize Shipment

To the Great Western Railway of England goes the palm for this week's most sensational job of transportation. A complete factory, in full production, was moved from London to Chippenham, 94 miles, without interruption of its business. The removal included 750 tons of machinery, the household effects of 36 families and over 100 persons. Every bit of the traffic—except the passengers—was conveyed in containers, and the removal was so arranged that machinery at work in London one day was dismantled, loaded in containers, conveyed by truck to Paddington for dispatch by rail to Chippenham, and re-erected in the new factory in time for immediate use the next morning. No piece of machinery was kept out of service for longer than 14 hrs. As each machine was moved, so were the families of its operators, facilities for meals having been arranged by the railway while the household effects were being transported and installed in new quarters.

An Idea for the Pullman Company

Travel is light this year, as every holder of rail stock knows, but the railroads shouldn't get discouraged; even quietude has business possibilities. We have a scheme which should prove a money-maker for the Pullman Company right now. It is this: There are many people who can't afford to travel but who would be glad to buy a Pullman section to install in their homes—for the occasional vicarious luxury of sleeping behind green curtains and imagining themselves on the way to Bar Harbor. We happen to know one man, in Darien, Conn., who tried for about two months to explain to various Pullman clerks, over the phone, that he wished to purchase, for use in his own home, a section—upper, lower, ladder, blankets, green curtains, and all. He wanted it for his two children, in order to save space in their bedroom. He failed dismally in his explanations (all the cerks were sure that he wanted to "go" somewhere in the section) and we understand he has given up his efforts. But to us it looks as though a nice little business might be built up by the company; sort of a side line. —From The New Yorker.

All on the Job

Employees on the Providence division of the New York, New Haven & Hartford called their alertness to the attention of their superior officers in a striking manner a few weeks ago. This division has long had a commendable record for being on the lookout and for properly reporting unsafe conditions, but the climax came only recently when no fewer than five different men, at different points on the route of a train, noticed and reported a single defect. On the day in question, as train No. 11 was passing Readville, Mass., the signal station operator at that point reported an unusual noise, as a result of which the train was checked as it passed Canton Junction and Sharon crossings. However, nothing unusual was observed. The train was examined by a car inspector while it was standing at the station at Providence and again nothing wrong was discovered. The noise was reported again, however, by the signal station operator at Hills Grove, by the signal station operator at East Greenwich, by a crossing watchman at Davisville and by a section foreman at East Greenwich. At Westerly, a car inspector met the train and rode it to New London. He found that while the train was in motion, the brake rigging came in contact with the safety bars, due to the fact that the hanger pins on one coach were worn. While the defect did not constitute a source of danger, it did cause an unusual amount of noise which, as indicated, the employees on the Providence division were quick to note.

Some More Lackawanna Veterans

It is customary to honor railway employees who have given the years of their lives to the transportation business, but it seems quite as appropriate that some honor should be paid also to the railways which have employed them so long. One of the railways which deserves much credit in this respect is the Delaware, Lackawanna & Western, where par for length of continuous service seems to be about 50 years. Three Lackawanna veterans who recently retired had a total of 134 years of service to their credit. One of them, William Snow, started as a clerk in August, 1881, and retired as freight cashier at New York after 50 years and 9 months of work. Another was Michael Egan, a veteran of 50 years and 5 months of continuous service. He started in 1881 as a fireman on the ferry boats of the Hoboken Ferry Co., and has been on the North river ever since, having been a watchman on the Lackawanna ferries since 1905. The third Lackawanna veteran, Albert W. Chapman, was practically a new man on the railroad in comparison with Messrs. Snow and Egan. Mr. Chapman, a dispatcher, retired after only 32 years and 10 months of service.

A Western Pacific Gold Spike

San Francisco, Cal.

To the Editor:

Referring to the articles which have appeared in recent issues of *Railway Age* on "What Becomes of Those Gold Spikes?":

The golden spike which was driven at Bieber, Cal., on November 10, 1931, by Arthur Curtiss James of New York, to connect the newly-completed extensions of the Western Pacific and the Great Northern between Keddie, Cal., and Klamath Falls, Ore., now reposes in the office safe of Charles Elsey, president of the Western Pacific, in San Francisco.

As the time approached for the holding of the ceremonies at Bieber, considerable interest was evinced in the "last spike." Like the numerous ancient cities of Greece which laid claim to the honor of being the birthplace of Homer, several cities of the West offered to provide the golden spike, and the newspaper story that there were three other spikes made for the occasion is doubtless true.

However, the golden spike driven by Mr. James was presented more than a year in advance of the event to H. M. Adams, then president of the Western Pacific, by the citizens or Oroville, through the Rotary Club of that city.

The spike has distinguished ancestry in that its gold came from historic mines and present-day sources in the vicinity of Oroville, which is in the heart of the trails of '49. Nuggets represented the primitive panning method, hydraulic mining was recalled by gold from the famous Cherokee mine, tunnels in the ancient river channel made contributions, and quartz mines and dredgers were represented.

When the golden spike was exhibited on Market street, San Francisco, it was kept under guard. Occasionally a marriage ceremony is marred by the failure of the bridegroom to remember the ring, but in this wedding of the rails the spike was not forgotten, as this detail of the celebration was entrusted to one of the ranking officers.

It is an historical fact that the golden spike used at Bieber was driven twice before being extracted for its safe return to San Francisco; this because of the urgent pleas of the photographers who demanded "more shots."

Thomas P. Brown,
Editor, News Service Bureau, Western Pacific.

NEWS

Buffalo Would Prove Seaway Plan Unsound

C. of C. plans educational campaign to show disadvantages of St. Lawrence project

Plans for a nation-wide educational campaign to show that the St. Lawrence seaway project is economically unsound are being considered by the Buffalo (N. Y.) Chamber of Commerce.

Its special St. Lawrence committee, meeting on August 3, studied means of letting the whole country know all the facts regarding the plan to turn the Canadian river into a waterway for large ocean steamers.

With 22 western states conducting a campaign for the waterway, it was pointed out that any counter effort would involve much effort and probably large expenditures. No official statement had been issued up to Wednesday evening regarding the committee's meeting, but one suggestion was that New York State be asked to join Buffalo in its effort to get before the country the real truth about the St. Lawrence.

Three principal lines of attack were advanced at the meeting, at which its chairman, James McC. Mitchell, presided, with all members in attendance. These were:

First, that Buffalo take the lead in a country-wide educational program to show that it is economically unsound, from a navigation standpoint, to use American money to improve the St. Lawrence.

Second, that both Republican and Democratic state conventions be asked to go on record as opposed to this project.

Third, that Senator Borah's special St. Lawrence investigating committee be invited to hold a hearing in Buffalo before acting on the proposal.

It was indicated the chamber would make no statement and adopt no resolutions until it has made a most thorough investigation of every phase of the seaway proposal.

Samuel B. Botsford, executive vice-president of the business organization, gave the committee much data concerning the proposal and made it plain that Buffalo's opposition must be based on economic grounds rather than on the mere fact that that city might be harmed by completion of the seaway.

Transcontinental Passenger Fares

Examiner W. A. Disque, of the Interstate Commerce Commission, has recommended in a proposed report the dismissal of a complaint filed by the Great Northern and the Western Pacific regarding the failure or refusal of the Southern Pacific and some of its direct connections to agree to join with them in the maintenance of round trip passenger fares at the standard figures between Los Angeles, Cal., and eastern points with interchange arrangements at San Francisco via the new route of the Great Northern and Western Pacific.

Salaries of Frisco Officers Reduced

A reduction of from 5 to 10 per cent in the salaries of higher officers of the St. Louis-San Francisco became effective on August 1. Two similar reductions were made previously. The five per cent reduction will apply to salaries ranging from $3,500 to $10,000, while the 10 per cent cut applies to those above $10,000.

Former Secretary of Superintendents' Association Dies

Julius Rothschild, former secretary of the American Association of Railroad Superintendents, died at his home at St. Louis, Mo., on July 26, after a lingering illness. Mr. Rothschild served the association as secretary from 1918 until February, 1930, when he was forced to give up the duties on account of failing health.

National Lead Company to Ship by Rail

The board of directors of the National Lead Company has approved the use of railway transportation, wherever possible, for all shipments under the company's control. A resolution recently adopted said the action was taken in recognition of the importance of the railroads in a general trade recovery, and that it would also improve the company's own business by helping to restore the purchasing power of the railroads and their employees.

Lamont Resigns as Secretary of Commerce

President Hoover, late on Wednesday, August 3, announced the resignation of Robert P. Lamont as secretary of Commerce, saying that Mr. Lamont had found it necessary to re-enter private business and had remained at great sacrifice for several months at his request. Mr. Lamont resigned as president of the American Steel Foundries to enter the Cabinet in 1929. Roy D. Chapin, chairman of the board of the Hudson Motor Company, has been appointed Secretary of Commerce.

Says Motor Carriers Should Pay Own Way

Privilege of using peoples' highways amounts to subsidy, Harrison testifies

That trucks and buses should pay their own way, "something they are not doing so long as they use the peoples' highways without paying adequately for that privilege," and that such a privilege is in the nature of a subsidy, which must be withdrawn in the public interest, were the principal points developed by Milton W. Harrison, president of the National Association of Owners of Railroad Securities, testifying on July 26 before the Ways and Means Committee of the House of Representatives of the Pennsylvania Legislature, in support of three bills designed to increase the state's revenue from commercial motor vehicle operations. An abstract of Mr. Harrison's testimony, including a brief outline of the three measures under consideration, follows:

"The interest of security owners in matters affecting the railroads should be thoroughly self-evident. Many millions of life insurance policies and savings bank accounts, representing the accumulated reserves of a large proportion of the country's population, depend in a considerable measure upon railroad investments for their security. In Pennsylvania, for example, there are now outstanding 14,700,000 life insurance policies —one and a half policies for each man, woman and child in this commonwealth, amounting to ten and a quarter billions— and 6,110,736 savings accounts, about 64 per cent of the population, aggregating $2,818,355,000. Both insurance policies outstanding and savings accounts are substantially backed by railroad investments, as are the millions of fire and other insurance policies. In addition, many religious, charitable and educational organizations have substantial portions of their reserves invested in these securities.

"The interest of the public, therefore, is akin to that of railroad security owners, and viewed from this angle there can be no doubt as to the very vital interest Pennsylvania citizens have in the railroads.

"I likewise, desire to call to the attention of the committee the fact that Pennsylvania insurance and savings institutions alone hold approximately $100,000,000 of the securities of roads affected by the operation of motor vehicles in this state, securities which in our opinion would be benefited by the proposed legislation.

"While I appreciate that the three bills

now before the committee have for their purpose the raising of revenue for the state—not for the railroads—if they react incidentally to the advantage of the railroads, I think that is sufficient reason for railroad security owners to favor their enactment.

"It is my belief that motor carriers have long enjoyed privileges in the nature of a subsidy, which have permitted them to depart from their economic field of utility and compete with the railroads on a scale which threatens to impair the ability of the latter to render the type of service which the public demands, and that, sooner or later, if the public interest is to be served, those special privileges must be withdrawn. Now, when the public treasury is sorely in need of funds and when the railroads are depressed for lack of traffic, should be an appropriate time to correct this condition.

"Much has been said by those interested in motor carrier operations to indicate that trucks and buses are now grossly over-taxed, and that they have for some time been forced to assume an unjustly heavy part of the highway expense. I sincerely hope that the committee will weigh these contentions against the basic question of whether the highways were built and are being maintained primarily for use by carriers for hire or for the use of the public; in other words, whether the commercial use is primary or whether it is merely incidental to the use of the general public in traveling from place to place.

"I believe it will be conceded that the highways belong to the people, and that, if they chose, the people could exclude trucks and buses operating for hire entirely from the highways. On this basis, if trucks and buses operating for private gain wish to use the highways, the people have the right to require them to pay adequately for that privilege. This, in my opinion, is an entirely fair proposition. If it is fair, the remaining question is one of price.

"The three bills here under consideration do not, so far as I can see, propose to impose any undue burden upon motor carriers. Number 172 merely requires carriers of property operating in interstate commerce under certain conditions to secure a license in Pennsylvania. Thirty-four States have already abolished reciprocity on commercial vehicles. Number 179 eliminates the credits formerly deducted from the eight mills gross receipts tax. Neither of these two bills appears to me to be unreasonable. Since 1889 the railroads in Pennsylvania have been required to pay eight mills on gross receipts without deduction on all revenue derived from intrastate business. Number 176 goes into detail as to the weight, height and length of vehicles permitted to operate over the highways of Pennsylvania, and changes the schedule of license fees. Without going into technical detail, it seems to me that the proposed fees tend to redistribute the cost so that the heavier vehicles come in for a larger share, which is fair and logical in my opinion. Even so, they will be considerably lower for the heavier vehicles and higher for the lighter vehicles than are the fees recently recommended by the New York State Commission for the Revision of the Tax Laws.

"The theory of highway taxes in Pennsylvania, as I understand it, is that the state highway system, which consists of about 15 per cent of all the mileage, substantially receives all the benefits from motor registration fees and gasoline taxes. The secondary highways, which compose 85 per cent of the mileage, are supported principally by property taxes. I understand further that the motor registration fees and gasoline taxes, plus federal aid, more than pay for the cost of maintaining the state highway system, and that this fact is pointed to by the motor carrier industry in the support of contentions that trucks and buses are paying more than their fair share of the highway expense. It should be recognized, however, that the trucks and buses operating within municipalities and those operating over secondary highways bear a large proportion of the expense of maintaining the 15 per cent of the highways which compose the state system. There are many thousands of such vehicles which perhaps never use the state system, yet the fees and gasoline taxes they pay go to that system. When such fees and taxes are added to those paid by private passenger automobiles and by trucks and tractors operated by farmers they amount to a considerable sum, and most assuredly ought to pay for the upkeep of 15 per cent of the highway mileage.

"I mentioned at the outset that railroad security owners favored enactment of these bills because, in their opinion, such enactment would indirectly aid the railroads. It would tend to discourage rather than encourage the installation of additional trucks and buses on the highways by fly-by-night operators attempting to operate on shoestring finances to the endangerment of the public; and whose operations in the struggle to survive tend only to weaken the railroads and legitimate and responsible motor vehicle operators. It would serve to equalize the tax burden as between the railroads and the motors. It would lessen the subsidy now granted by the people to the highway carriers and thus would probably return to the rails some of the lost traffic which would move by rail were competitive conditions equal.

"This might be criticized as a selfish point of view, but I do not think it is. I have already indicated the real interest the people of Pennsylvania have in the railroads. Any breakdown in the railroad structure would react drastically against the public interest; there can be no question whatever about that. Motor carriers should not be taxed off the highways, because, when used in their proper sphere they are economic and render a necessary and vital service to the public. They should not, on the other hand, be subsidized by the public in order that their owners might receive a more generous profit or that they might compete with the railroads at public expense and to the weakening of the transportation facilities of the state as a whole. They should pay their own way, something they are not doing so long as they use the peoples' highways, to the danger and inconvenience of the people without paying adequately for that privilege. I do not think it can be said they will be doing more than that under these three bills."

Further Hearing on Six-Hour Day

The Interstate Commerce Commission has assigned its investigation of the effect of the application of the six-hour day in railway service for further hearing at Washington before Division 6 on September 19 for the purpose of hearing from the express and sleeping car companies and their employees and also some rebuttal testimony by the railways as to the testimony introduced by representatives of the employees at the hearing which began on June 2.

Roadmasters Postpone Convention

The Roadmasters' and Maintenance of Way Association, through action of its Executive committee, has voted to abandon its annual convention which was scheduled to be held in Chicago on September 20-22. This action was taken in recognition of the conditions now prevailing on the railways. This convention would have celebrated the fiftieth anniversary of the organization of the association, annual meetings of which have been held without interruption until last year.

Conductors and Trainmen Agree on Hours

An agreement whereby employment will be more evenly distributed between the members of the Order of Railway Conductors and the Brotherhood of Railroad Trainmen than now obtains by reason of the exercise of seniority rights by members of the Conductors' Brotherhood was entered into at a meeting of committees of the two organizations at Chicago on July 29. Under the agreement, passenger conductors will be limited to 5,500 miles each month, freight service conductors to 3,500 miles and yard service employees to 26 days a month.

Missouri Pacific Relief Fund

The Missouri Pacific and its employees, during the period from November 1, 1931, to June 30, 1932, expended a total of $117,652 in extending relief to unemployed workers of the railroad. During that time, a total of $127,721 was raised through a special donation of $25,000 by the railroad and by voluntary contributions of ½ of 1 per cent of the salaries of employees. While deductions from pay rolls were discontinued in June and active operations of the fund has stopped, the balance of $10,069 will be held for an emergency. According to present plans, a similar fund will be raised next winter if needed.

New Equipment Placed in Service

Class I railroads in the first six months of 1932 placed in service 1,927 new freight cars, according to reports compiled by the Car Service Division of the American Railway Association. In the

same period last year, 6,951 new freight cars were placed in service. The railroads on July 1 this year had 1,951 new freight cars on order compared with 8,963 on the same day last year.

The railroads also placed in service in the first six months this year 34 new locomotives compared with 89 in the same period in 1931. New locomotives on order on July 1 this year totaled six compared with 36 on the same day last year.

Freight cars and locomotives leased or otherwise acquired are not included in the above figures.

I. C. C. Employees Furloughed

As one of the effects of the reduction in the appropriation for the Interstate Commerce Commission made by Congress, the commission has notified 48 employees of its Bureau of Accounts that they will be furloughed without pay from August 16 to at least the end of the year. The allowance for the Bureau of Accounts was reduced from $1,383,000 for the fiscal year just closed to $683,000 for the current fiscal year. In general, employees of the commission will be subjected to the furlough of about one month required by the terms of the economy bill and an additional furlough of about a month required by the reduction in appropriation but the cut in the Bureau of Accounts' allowance was much greater than that applied to the commission's organization generally.

Loans by Railroad Credit Corporation

The Railroad Credit Corporation on August 1 had either actually made or had authorized loans to railroads to meet their fixed interest obligations totaling $28,388,465, according to the monthly report filed with the Interstate Commerce Commission. Of that amount, $20,445,441 represented loans actually made, leaving a balance of $7,943,024 to which the corporation is committed.

Collection of rate increases under Ex Parte 103, according to the report, totaled $26,034,210 in the first five months this year, the increase having become effective January 4. The amount derived from the increase in May amounted to $5,250,961.

The railroads in July repaid to the Railroad Credit Corporation $1,030,000 of loans. For the period to August 1, the rail carriers revised their applications for loans already filed with the corporation and reduced the amount requested in those applications by more than $47,000,000.

Free Crane Service Found Unlawful

Practices of Class I carriers in Official Classification territory (except carriers in New England) in loading and unloading freight for shippers and consignees by means of cranes, derricks, and other such equipment have been found unlawful in a decision made public by the Interstate Commerce Commission, dated July 20, following an investigation which disclosed a lack of uniformity in tariff publications with respect to such practices and many instances in which the service was rendered free. A proposal of the roads to publish a uniform charge of 50 cents per ton, minimum $5 per shipment, for loading and unloading services by means of power cranes and other such equipment, to apply at all stations where such crane service is maintained or furnished, was found justified, but a tariff filed by the Pennsylvania was ordered canceled without prejudice to the filing of new schedules in conformity with the commission's findings.

"Eclipse Special" on the Maine Central

The latest time table of the Maine Central, effective August 1, carries a full page advertisement of the special train which that road will operate between Portland, Me., and Bartlett, N. H., on Wednesday, August 31, for the benefit of those interested in obtaining the best possible view of the total eclipse of the sun which will be visible on that day throughout parts of New England.

The "eclipse special" will leave Portland at 11:15 a. m., eastern standard time, after the arrival of special trains to be operated by the Boston & Maine from Boston, Mass., as described in the *Railway Age* of July 30. Stops will be made between Portland and Bartlett to pick up and leave passengers, with arrival at Bartlett scheduled for 1:20 p. m., about two hours before the time when the eclipse will reach totality—3:28 p. m. Returning, the special will leave Bartlett at 3:55, reaching Portland at 6 p. m., in time to connect with the "Pine Tree Limited" for points in northern Maine, and with other regular trains for Boston and New York.

The total distance covered by the special will be 141 miles, while the round-trip fare between Portland and Bartlett will be only $1.50, or approximately one cent per mile.

Can We Afford This Waterway?

Time was when we would have read, with the old-time American pride bursting from us, the news that the United States and Canada had signed a treaty to build a twenty-seven-foot channel through the St. Lawrence River to the Great Lakes at the cost of half a billion of dollars so as to bring to the heart of our Inland Empire all the commerce of the Seven Seas.

But when we read that this is exactly what was done yesterday by the Canadian Minister and our Secretary of State we feel decidedly squeamish about it. We can't really be happy at all.

We have to ask, is this plan any real good, anyhow? Won't its transportation features merely cripple further our already crippled railroads and thus further deteriorate what was once the finest transportation service the world had ever known?.....

Can we afford it?

The canal boosters say this morning "that thousands of men will be put to work for ten years." Grand! But who's going to pay their wages? Why, the taxpayer! The wages will be paid by that already overburdened, maltreated person, the taxpayer, who gives now his very lifeblood to the politicians and sees them use it for the eventual destruction of his own country.....

—From an Editorial in the New York Evening Post.

Missouri Truck Law Upheld

The constitutionality of the Missouri state bus and truck law, which went into effect on September 14, 1931, to govern the size, weight, routes, rates and tariffs of motor vehicles, was upheld by a special federal tribunal of three judges at Kansas City, Mo., on July 28, the court denying the application of the Schwartzman Service Company of St. Louis for an injunction to restrain the Missouri Public Service Commission from enforcing the act. When the law was enacted, the Missouri Public Service Commission granted the truck lines 90 days from September 14 in which to file their rates and tariffs and to make application for state certificates of convenience and necessity. In rejecting the Schwartzman Company's application for the injunction, the special tribunal, which included Arba S. Van Valkenburgh, presiding judge of the United States Circuit Court of Appeals, and United States District Judges Merrill E. Otis and Albert L. Reeves, pointed out that reasonable regulations were necessary and that there appeared to be nothing either illegal or unfair in the Missouri State statute to govern the operations of motor coaches and freight trucks on the highways of the state. The decision upholds the jurisdiction of the Missouri Public Service Commission over motor coaches and trucks using the state roads.

I.C.C. Asked to Allow Competitive Rate Reductions on One-Day Notice

In behalf of all carriers and their tariff-publishing agents, F. L. Speiden, agent of the Southern Freight Traffic Bureau, has asked the Interstate Commerce Commission for sixth section permission to put into force a general authorization "to publish on one day's notice reduced rates, fares, and charges necessary to effectively compete with actual movement or certified tenders by carriers via air, water, or motor vehicle highway." The commission has been issuing special permission to make reductions on less than the statutory 30 days' notice in thousands of cases on applications to meet competition but the time required to pass upon such applications is often so great as to make the special permission ineffectual. In support of the application Mr. Speiden said in part:

"The necessity for competing with unregulated carriers runs to the elemental

principal of competition, and when traffic is offered for movement, the element of time is of prime importance. Properly safeguarded no objection appears to giving carte blanche permission to do immediately what is regularly permitted in a restricted way on formal application, the difference being it could be done in time to effectively meet competition rather than delay until a part of the traffic had already moved in favor of the unregulated carrier against the railroad. The commission has received more than 125 such applications in one day, and such applications are regularly granted, but at a cost of ten days or more delay before the ten days' notice begins to run, so that in effect a ten-day application requires 20 days to make the rate effective."

Consideration of the application has been delayed by the commission, it is understood, pending the receipt of additional information.

I. C. C. Requires Salary Limitation as Condition for Loan to Short Line

The Interstate Commerce Commission, Division 4, has given an indication of one way of controlling railway salaries which it may deem excessive by imposing, as a condition attached to its approval of a loan of $40,750 to the Stockton Terminal & Eastern from the Reconstruction Finance Corporation, that throughout the period during which the loan remains unpaid the applicant should agree with the corporation that the amount of salaries paid to executives, officials, and staff assistants shall not be greater in relation to the total payroll than like salaries paid during 1931. The salaries in question in this instance were small in amount, but, according to the commission's report, represented a large percentage of its revenues. For the period 1921 to 1930 its operating revenues averaged $38,431, and, the report said, "from 1927, when five employees listed as officials received $12,979 out of the total payroll amounting to $26,769, to 1930, when $15,770 out of $29,541 was paid these same employees, the overhead or supervisory expenses represented about 50 per cent of the total payroll. The total payroll expense for 1931 was $18,049, compared with $29,541 for 1930, and the officials were reduced from 5 to 3, and their compensation from $15,770 to $6,160. In the forecast of operations for 1932, the outlay for salaries is $16,950. The ability of the applicant to operate its property during the period for which it seeks a loan as profitably as that forecast for 1932 will require that the overhead costs remain approximately the same as they were in 1931."

Shortly after it began passing upon railway loan applications Division 4 instituted an investigation of railway salaries above $10,000 a year paid by Class I railways by means of a questionnaire, the returns to which have since been made public, but if it has attempted to influence the policy of any of the larger roads as to what reductions they should make through its power to pass upon loans it has not so indicated in its reports. The salary question was also raised in a report denying the application of the Silverton & Northern for a loan of $12,945. It was pointed out that during 1931 the company had reduced the number of employees on its rolls to 10 persons. Four of these were executive officers drawing salaries totaling $15,367. The total operating expenses during 1931, according to the report, amounted to $18,844, of which $16,526 represented compensation of employees. "From the foregoing it is apparent," the report said, "that without reduction of the salaries of the executive officers there can be no substantial reduction in operating expenses below those for 1931."

North Western Rebuilds Parlor Cars

The Chicago & North Western placed in service on August 1, between Chicago and Green Bay, Wis., two parlor cars which were rebuilt in company shops and which include such departures as sponge rubber carpet padding and asbestos tile floor covering. The interiors of the two parlor cars are featured by vivid seat coverings set against a background of mahogany and ivory, and modern lighting fixtures. There are three sets of six chairs in the car, finished in gray and coral, blue and gold, electric blue and a pepper tree pattern on red plush and five chairs upholstered in rust and blue. The lighting fixtures are of the "L'Image" design, while slender covered lights are placed on a mirror background to give a shadow effect as well as plenty of light for reading. In addition to the ceiling and side lamps there are parchment covered table lamps on small tables between the seats. The upholstered benches at each end of the car are finished in two tones, patterned green and electric blue. The carpeting of the car is figured brown with a trace of black. The floor of the smoking room is covered with asbestos tile, while the seats in this compartment are covered with brown leather. As an experiment, sponge rubber is used as padding under the carpeting in the car.

St. Louis & O'Fallon Valuation Tentatively Revised to Include Reproduction Cost

A revised valuation of the St. Louis & O'Fallon Railway, which has received so much publicity because its first recapture valuation was selected as a test case regarding the Interstate Commerce Commission's valuation methods, has been made public by the commission in the form of a proposed recapture report by Examiner P. A. Conway covering the years 1920 to 1927, inclusive. After the Supreme Court of the United States had set aside the original recapture order as to this nine-mile road because the commission had failed to give weight to current cost of reproduction, the case was re-opened and its scope extended to include the later years, as the first proceeding stopped with the year 1923, the new proposed report, which includes valuation figures reflecting to some extent the cost of reproducing the property at "period prices," but reduced somewhat by averaging them with estimates of the original cost, recommends a finding that the O'Fallon from 1920 to 1926, inclusive, had excess net railway operating income amounting to $590,549, of which one-half would be recapturable, and that there was no excess in 1927. For the period 1920 to 1923, included in the original report, the recapturable excess is about $28,000 less than that found in the original report. The recommended findings are based on a tentative valua-

Many Colors Are Featured in the Cars

tion ranging from $1,200,000 in 1920 to $1,090,000 in 1927, whereas in the original report the final values ranged from $856,065 for 1920 to $978,246 for 1923. The cost of reproduction at period prices, less depreciation, as stated in the present report, ranges from $1,216,185 for 1920 to $1,075,662 for 1927. The cost of reproduction less depreciation at 1914 prices as used in the original report, in combination with later investment at actual cost, ranged from $658,531 for 1920 to $645,466 for 1923.

Milwaukee Association of Commerce Submits Plan for Trade Revival

Estimating that if each of the 30,000,000 or more people now gainfully employed in the United States could be induced, by assurance of continued employment, to commit themselves to the purchase of $500 worth of goods or services, the resulting potential business would be sufficient to furnish jobs for an additional 10,000,000 workers, the Milwaukee (Wis.) Association of Commerce has submitted to the Chamber of Commerce of the United States a plan for the stimulation of business.

This "consumer-commitment-purchase" program, which is to be considered this month by the executive committee of the National Chamber, involves: (1) A national publicity campaign outlining the plan; (2) a national market survey by local chambers of commerce, in which each person now employed would be asked to tabulate on a standardized form the purchases which they would make if they had reason to believe that their "present employment, its equivalent or better, would continue;" (3) tabulation of the results of this survey; (4) classification of these results by industries; (5) submission of these results to heads of trade organizations involved, and the securing of statements from them that if the indicated market became an actuality as a result of orders placed it would return so many persons to employment; (6) the setting up and publicizing of these combined statements in the form of a quota or goal; (7) the conduct of a commitment-to-purchase campaign, under which the consumers covered by the first survey would be asked to place their orders through regular trade channels, such orders, however, being contingent on the reaching of the goal for the entire country. Attainment of such a goal within a fixed time limit would automatically validate orders, start deliveries and force an increase in employment.

Silver Bay Industrial Conference

The theme of the Silver Bay Conference on Industrial Relations, which will be held at Silver Bay on Lake George, N. Y., August 24-27, is "The Human Element in the Period of Reconstruction." The conference will open at 2:30 p. m., Wednesday, August 24, and will close Saturday noon, August 27. On Wednesday afternoon and evening two addresses will be made; one on the Human Element in the Reconstruction Period, by Cameron Beck, personnel director of the New York Stock Exchange; and the other, The Economic Factors Involved in Reconstruction, by Prof. T. N. Carver, of Harvard University.

On Thursday morning the Present Aspects of the Problem of Unemployment will be presented for the employers by George S. Hawley, president of the Connecticut Gas Light Company; for the workers, by Spencer Miller, Jr., secretary of the Workers Education Bureau; and for the investors, by Chapin Hoskins, industrial and commercial editor, Forbes Magazine. At the evening session W. T. Holliday, president of the Standard Oil Company of Ohio, will speak on Industry's Approach to the Problem of Reconstruction.

Early on Friday morning a series of conferences will be held on Unemployment Benefits, Reabsorption of the Unemployed, and Railroad Problems, the latter under the direction of W. W. Bates of the Delaware & Hudson. This will be followed by two other sectional conferences, one on Rebuilding Financial Security of Employees, and the other on Pensions, the latter under the direction of J. C. Clark of the Equitable Life Assurance Society. An address on Re-enter the Industrial Statesman will be made at the evening session by Dr. Samuel W. Grafflin.

The closing session on Saturday morning under the theme of Reconstruction will include three addresses, one on Necessity for and Analysis of Plans for Economic Rehabilitation, by Prof. Frank D. Graham of Princeton University, and another, The Place of Legislation in the Program of Reconstruction, by John B. Andrews, secretary of the American Association for Labor Legislation. The closing address, Staging the Comeback, will be made by Doctor Grafflin.

Reservations may be made through E. C. Worman, executive secretary, 347 Madison Avenue, New York.

The Canadian Roads in June

Net revenues of the Canadian Pacific for June, amounted to $1,578 616, which compares with $1,919,823 in June of last year, a decrease of $341,207. Gross revenues for the month totaled $10 496,801, representing a decrease of $2,225,534 from the gross for June of last year, but this was substantially offset by a reduction in operating expenses, which in June of this year amounted to $8,918,185, a decrease of $1,884,326 from the expenses for June of last year.

For the first six months of this year, net revenues amounted to $5,251,879, which contrasts with $6,806,359 in the corresponding six-month period of last year, a decrease of $1,554,480. For the six month period, by the same comparison, gross revenues were down by $14,265,037, while expenses declined $12,710,557.

An increase of $1,332,861 in the net revenues of the Canadian National for June, 1932, as compared with June, 1931, is shown in the monthly statement. This betterment in net was effected despite a heavy drop in gross revenues.

Gross revenues in June were $12,437,076, a decrease of $2,799,154, or 18.37 per cent from the gross revenues of June, 1931. Operating expenses, however, were cut by $4,132,015 from $15,341,235 in June, 1931. The result was that the railway had net revenues for the month of $1,227,856 as compared with a net revenue deficit in June, 1931 of $105,005, a betterment of $1,332,861. The operating ratio for June, 1932, was 90.13 per cent, as against 100.69 per cent in June of last year.

For the first half of 1932 the Canadian National had gross revenues of $70,187,818, a decrease of $18,087,808 or 20.49 per cent, as compared with the first six months of 1931. Operating expenses for the first half of the current year were $67,779,143, a decrease of $19,167,447, or 22.05 per cent, from the expenses for the first half of 1931. Net revenue for the half year, 1932 was $2,408.674 as against $1,329,035 in 1931, an increase of $1,079,639 or 81.23 per cent.

I.C.C. to Expedite Consideration of Cotton Rates

So that the freight rates to be applied on cotton shipments during the coming season may be known as soon as possible without the danger of having some of them tied up in suspension proceedings, the Interstate Commerce Commission, at the request of carriers, has arranged to expedite consideration of changes proposed or about to be proposed. In a press notice issued on August 3, it was pointed out that numerous tariffs have been, or shortly will be, filed with the commission proposing important changes in the rates, rules and regulations applicable to cotton from Arkansas, Oklahoma, Louisiana, Tennessee and Mississippi points and a few points in other states to certain Gulf ports, principally New Orleans, and destinations in southern and official territories and in Canada. Some of such tariffs are to become effective August 27, others on September 6, and possibly others on other dates subsequent to August 27.

It has been represented to the commission by a committee of the interested carriers, supported by many of the shippers, that cotton for the 1932 season will commence to move about the first of September; that it is highly important to the interested shippers and carriers that the rates to be applied during the coming season be known as soon as possible in order that arrangements may be made for handling the crop; and that it is therefore much to be desired that it be determined as quickly as possible whether or not the tariffs will go into effect on their effective dates or will be suspended. It is understood that protests and requests for suspension will probably be filed with respect to some of these tariffs. Under the commission's ordinary procedure such protests are required to be filed not less than 10 days prior to the effective date of the schedules. Under this procedure it is usually impossible for the commission to complete its investigation in time to an-

nounce its decision on the matter of suspension until one or two days before the effective date.

As a result of the representations made to it, the commission has concluded that this is an emergency matter and that it is in the public interest that a determination be reached on the matter of suspension at the earliest possible moment. Accordingly it has arranged for an informal conference before Division 2 of the commission and the Suspension Board at the offices of the commission in Washington, D. C., on Tuesday, August 16. All parties desiring to present any facts in support of or in opposition to any of the provisions of the tariffs indicated should either attend the conference in question or present their views and arguments in writing on or before that date.

Mexican Government Operating S. P.

Operation of the lines of the Southern Pacific of Mexico, only for the purpose of affording relief to the West Coast territory of Mexico served by the railroad, was begun on July 21 by the Mexican government, pending settlement of the strike which tied up all traffic on June 27. The government took possession of the road by presidential decree under the terms of the Law of Communications of August, 1931, which permits the legal attachment of a railroad in cases of disturbance of the public peace or well being. Representatives of the government have pointed out that the taking possession of the road does not constitute a seizure of the property.

Mariano Cabrera, assistant secretary of communications, and formerly director general of the National Railways of Mexico, has been appointed a special commissioner of the Mexican government to direct the operation of the railroad. Under the terms of the attachment order he will operate the line, using the Southern Pacific administrative officers and personnel, and including H. B. Titcomb, president and general manager.

The action of the government follows closely upon the decision rendered on July 20 by the Federal Board of Arbitration and Conciliation declaring the strike legal, but not necessarily justified. The latter point is contingent upon the final verdict of the board which it is expected will be completed and announced about August 10. The government order was prompted by the serious situation that has developed from a lack of transportation facilities on the West Coast, between Guadalajara, Jal., and Nogales, Son. Most apprehension was felt at Hermosillo, Son., about 170 miles south of Nogales, where public utility companies had practically exhausted their fuel supply, and there was danger of leaving the city without electricity or water.

The negotiations for the settlement of the Southern Pacific strike, and that of the Mexico City tramway workers, who returned to work on July 19, precipitated a reorganization of the Federal Board of Arbitration and Conciliation. On July 15, General Abelardo L. Rodriguez, secretary of industry, commerce and communications, warned Aquiles Cruz and Gregorio Contreras, president and secretary, respectively, of the Federal Board, that unless that body returned a verdict in the case of the Southern Pacific the two should resign their positions. They immediately tendered their resignations to General Rodriguez, which were accepted, and Javier Gaxiola and Adolfo Vasquez were appointed in their stead. The decision declaring the strike to be legal, but not necessarily justified, was rendered with the new officers on the board.

Net Operating Income for Six Months 1.01 Per Cent

Class I railroads for the first six months of 1932 had a net railway operating income of $112,329,374, which was at the annual rate of return of 1.01 per cent on their property investment, according to reports compiled by the Bureau of Railway Economics. In the first six months of 1931, their net was $240,504,555, or 2.16 per cent. Operating revenues for the first six months totaled $1,601,441,499, compared with $2,187,563,109 for the same period in 1931, or a decrease of 26.8 per cent. Operating expenses amounted to $1,280,607,169, compared with $1,716,730,131 for the same period one year ago or a decrease of 25.4 per cent.

Class I railroads in the first six months of 1932 paid $149,202,085 in taxes, compared with $163,400,736 for the same period in 1931, a decrease of 8.7 per cent. For June alone, the tax bill amounted to $24,441,093, a decrease of $2,675,503 under June the previous year.

Sixty-nine Class I railroads operated at a loss in the first six months of 1932, of which 24 were in the Eastern district, 14 in the Southern and 31 in the Western.

Class I railroads for June had a net of $12,653,515, which, for that month, was at the rate of 0.59 per cent. In June, 1931, their net was $50,618,184 or 2.35 per cent. Operating revenues for June amounted to $246,236,756, compared with $369,810,343 in June, 1931, a decrease of 33.4 per cent. Operating expenses totaled $199,330,751, compared with $280,133,204 in the same month in 1931, a decrease of 28.8 per cent.

Class I railroads in the Eastern district for the first six months had a net of $93,567,904, at the rate of 1.67 per cent. For the same period in 1931, their net was $138,200,368 or 2.47 per cent. Operating revenues totaled $832,950,898, a decrease of 24.5 per cent below the corresponding period the year before, while operating expenses totaled $638,497,269, a decrease of 25.5 per cent. Class I railroads in the Eastern district for June had a net of $12,187,572, compared with $27,179,548 in June, 1931.

Class I railroads in the Southern district for six months had a net of $7,703,759, at the rate of 0.47 per cent. For the same period in 1931, their net amounted to $25,497,912, at the rate of 1.55 per cent. Operating revenues amounted to $199,458,749, a decrease of 29.4 per cent, while operating expenses totaled $168,029,705, a decrease of 26.5 per cent. Class I railroads in the Southern district for June had an operating deficit of $1,362,805 compared with a net income of $3,206,851 in June, 1931.

Class I railroads in the Western district for six months had a net of $11,057,711, at the rate of 0.29 per cent. For the same six months in 1931, they had a net of $76,806,275, at the rate of 1.98 per cent. Operating revenues for six months amounted to $569,031,852, a decrease of 29 per cent, while operating expenses totaled $474,080,195, a decrease of 24.9 per cent. For June, the net railway operating income in the Western district amounted to $1,828,748. The net of the same roads in June, 1931, totaled $20,231,785.

CLASS I RAILROADS—UNITED STATES

	1932	1931	Per Cent Decline
Month of June			
Total operating revenues	$ 246,236,756	$ 369,810,343	33.4
Total operating expenses	199,330,751	280,133,204	28.8
Taxes	24,441,093	27,116,596	9.9
Net railway operating income	12,653,515	50,618,184	75.0
Operating ratio —per cent	80.95	75.75	...
Rate of return on property investment	0.59%	2.35%	...
Six months ended June 30			
Total operating revenues	$1,601,441,499	$2,187,563,109	26.8
Total operating expenses	1,280,607,169	1,716,730,131	25.4
Taxes	149,202,085	163,400,736	8.7
Net railway operating income	112,329,374	240,504,555	53.3
Operating ratio —per cent	79.97	78.48	...
Rate of return on property investment	1.01%	2.16%	...

Meetings & Conventions

The following list gives names of secretaries, date of next or regular meetings and places of meetings.

AIR BRAKE ASSOCIATION.—T. L. Burton, Room 5605, Grand Central Terminal Building, New York City.

ALLIED RAILWAY SUPPLY ASSOCIATION.—F. W. Venton, Crane Company, 836 S. Michigan Ave., Chicago. To meet with Air Brake Association, Car Department Officers Association, International Railroad Master Blacksmiths' Association, International Railway Fuel Association, International Railway General Foremen's Association, Master Boiler Makers Association and the Traveling Engineers' Association.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R., M. & O. R. R. Chicago, Ill.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, 332 S. Michigan Ave., Chicago.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C.R.R. of N. J., 143 Liberty St., New York. Annual meeting, October 24-25, 1932, St. Louis, Mo.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—F. O. Whiteman, Room 800, 1017 Olive St., St. Louis, Mo.

AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 West Harrison St., Chicago. Next meeting, Jan. 21, 1933.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C. I. & L. R. R., 836 Federal St., Chicago.

AMERICAN ELECTRIC RAILWAY ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York.

AMERICAN RAILWAY ASSOCIATION.—H. J. Forster, 30 Vesey St., New York, N. Y.

Division I.—Operating.—J. C. Caviston, 30 Vesey St., New York.

Freight Station Section.—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago.

Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York.

Protective Section—J. C. Caviston, 30 Vesey St., New York.

Safety Section.—J. C. Caviston, 30 Vesey St., New York. Annual meet-

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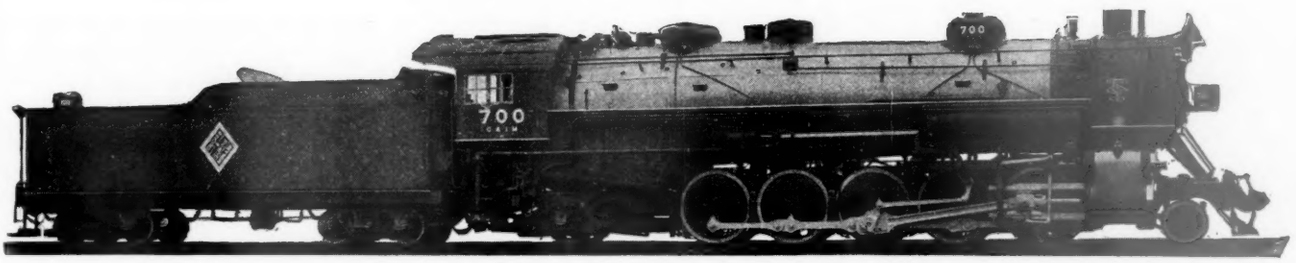
A RECORD HAUL

for Chicago & Illinois Midland



CYLINDERS 30" x 32" PRESSURE 200 LBS. DRIVERS 63" WEIGHT ON DRIVERS 321,700 LBS.
TRACTIVE POWER WITH BOOSTER 88,200 LBS.

"A new Lima 2-10-2 type locomotive handled a train consisting of 10,829 actual tons, or 12,037 adjusted tons, factor 12, from Cimic to Springfield, a distance of seventeen miles. The time consumed was 52 minutes, with one meet, which delayed them 5 minutes. The consist of the train was as follows:

50	- 70 ton gondolas, coal
55	- 50 ton gondolas, coal
1	- car merchandise
3	- empty box cars
Total 109	cars

"The temperature was about 35 degrees F.

"We are all very much pleased with the performance of these locomotives, and I think this record more than justifies our belief that they are the best type of engine for us, insofar as the movement of coal is concerned."

Chicago & Illinois Midland Railway Company.

LIMA LOCOMOTIVE WORKS INCORPORATED

Wherever Modern Power is in service, it is proving its economy and justifying the replacement of obsolete locomotives.

LIMA LOCOMOTIVE WORKS • Incorporated • LIMA • OHIO

ing October 4-6, 1932, Hotel Washington, Washington, D. C.
Telegraph and Telephone Section.—W. A. Fairbanks, 30 Vesey St., New York.
Division II.—Transportation—G. W. Covert, 59 East Van Buren St., Chicago.
Division III.—Traffic—J. Gottschalk, 143 Liberty St., New York.
Division IV.—Engineering—E. H. Fritch, 59 East Van Buren St., Chicago. Annual meeting, March 14-16, 1933. Exhibit by National Railway Appliances Association.
Construction and Maintenance Section.—E. H. Fritch, 59 East Van Buren St., Chicago.
Electrical Section.—E. H. Fritch, 59 East Van Buren St., Chicago.
Signal Section.—R. H. C. Balliet, 30 Vesey St., New York.
Division V.—Mechanical—V. R. Hawthorne, 59 East Van Buren St., Chicago.
Equipment Painting Section.—V. R. Hawthorne, 59 East Van Buren St., Chicago.
Division VI.—Purchases and Stores. W. J. Farrell, 30 Vesey St., New York.
Division VII.—Freight Claims.—Lewis Pilcher, 59 East Van Buren St., Chicago.
Division VIII.—Motor Transport.—George M. Campbell, 30 Vesey St., New York.
Car Service Division.—C. A. Buch, 17th and H. Sts., N. W., Washington, D. C.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W. Ry., 319 N. Waller Ave., Chicago. Annual meeting, October 18-20, 1932, Royal York Hotel, Toronto, Ont. Exhibit by Bridge and Building Supply Men's Association.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—J. A. Senter, Ind. Agt., N. C. & St. L. Ry., Nashville, Tenn.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in co-operation with the American Railway Association, Division IV.—E. H. Fritch, 59 East Van Buren St., Chicago. Annual meeting, March 14-16, 1933. Exhibit by National Railway Appliances Association.

AMERICAN RAILWAY MAGAZINE EDITORS ASSOCIATION.—Miss E. Kramer, M-K-T Employees Magazine, St. Louis, Mo.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C., M., St. P. & P. R. R., 11402 Calumet Ave., Chicago. Exhibit by Supply Association of the American Railway Tool Foremen's Association.—E. E. Caswell, Union Twist Drill Co., 11 S. Clinton St., Chicago.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—R. E. Schindler, Union Trust Bldg., Washington, D. C.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York. Railroad Division, Marion B. Richardson, *Railway Age*, 30 Church St., New York.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—H. L. Dawson, 1104 Chandler Building, Washington, D. C. Annual meeting, January 24-26, 1932, Chicago, Ill.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—H. D. Morris, District Claim Agent, Northern Pacific Ry., St. Paul, Minn. Annual meeting, June 21, 1933, Chicago.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., Room 411, C. & N. W. Station, Chicago. Exhibit by Railway Electrical Supply Manufacturers' Association.

ASSOCIATION OF RAILWAY EXECUTIVES.—Stanley J. Strong, Transportation Building, Washington, D. C.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—S. A. Baber, High Grade Manufacturing Co., 10418 St. Clair Ave., Cleveland, Ohio. Meets with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—C. R. Crook, 2276 Wilson Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month, except June, July, and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT OFFICERS ASSOCIATION.—A. S. Sternberg, M. C. B. Belt Ry. of Chicago, 7926 South Morgan Street, Chicago.

CAR FOREMAN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 2514 W. 55th St., Chicago. Regular meetings, second Monday of each month, except June, July, and August, Auditorium Hotel, Chicago.

CAR FOREMEN'S ASSOCIATION OF LOS ANGELES.—J. W. Krause, Room 299, 610 So. Main St., Los Angeles, Cal. Regular meetings, second Monday of each month, except July, August and September, Room 299, 610 So. Main St., Los Angeles. Club not active at present time.

CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.—J. F. Brady, Main and Barton Sts., St. Louis, Mo. Regular meetings first Tuesday of each month, except July and August, American Hotel Annex, 6th and Market Sts., St. Louis, Mo.

CENTRAL RAILWAY CLUB OF BUFFALO.—T. J. O'Donnell, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

CINCINNATI RAILWAY CLUB.—D. R. Boyd, 2920 Utopia Place, Hyde Park, Cincinnati, Ohio. Regular meetings second Tuesday in February, May, September and November, Hotel Gibson, Cincinnati, O.

CLEVELAND RAILWAY CLUB.—F. L. Frericks, 14416 Alder Ave., Cleveland, Ohio. Regular meetings second Monday of each month, except June, July and August, Auditorium, Brotherhood of Railroad Trainmen's Building, West 9th St., and Superior Ave., Cleveland.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich.

INTERNATIONAL RAILWAY CONGRESS.—January 19-30, 1933. Cairo, Egypt.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—C. T. Winkless, Room 700, La Salle Street Station, Chicago.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabasha St., Winona, Minn.

MASTER BOILER MAKERS ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—James B. Walker, 270 Madison Ave., New York. Annual meeting, November 15-18, 1932, Hot Springs, Ark.

NATIONAL ASSOCIATION OF RAILROAD TIE PRODUCERS.—Roy M. Edmonds, 1252 Syndicate Trust Bldg., St. Louis, Mo.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. W. Kelly, Suite 322, 910 South Michigan Ave., Chicago. Exhibit during A.R.E.A. Convention, March 13-16, 1933, Coliseum, Chicago.

NATIONAL SAFETY COUNCIL.—Steam Railroad Section; J. L. Walsh, (Honorary vice-chairman), Supt. Safety, M.-K.-T. R. R. Dallas, Tex. Annual meeting, October 4-6, 1932, Hotel Washington, Washington, D. C.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Copley Plaza Hotel, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York. Regular meetings third Friday of each month, except June, July and August, 29 W. 39th St., New York City.

PACIFIC RAILWAY CLUB.—W. S. Wollner, P. O. Box, 3275, San Francisco, Cal. Regular meetings second Thursday of each month, alternately in San Francisco and Oakland.

RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.—E. R. Woodson, Transportation Building, Washington, D. C.

RAILWAY BUSINESS ASSOCIATION.—First National Bank Building, Chicago, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 1841 Oliver Building, Pittsburgh, Pa. Regular meetings, fourth Thursday of each month except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS ASSOCIATION.—Edward Wray, 9 S. Clinton St., Chicago. Meets with Association of Railway Electrical Engineers.

RAILWAY FIRE PROTECTION ASSOCIATION.—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md. Annual meeting October 18-19, 1932, Hotel Cleveland, Cleveland, Ohio.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1841 Oliver Bldg., Pittsburgh, Pa. Meets with Mechanical Division, Purchases and Stores Division and Motor Transport Division, American Railway Association. No exhibit at 1932 conventions.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, 30 Church St., New York. Meets with Telegraph and Telephone Section of A. R. A. Division I.

RAILWAY TREASURY OFFICERS ASSOCIATION.—L. W. Cox, 1428 Broad Street Station Building, Philadelphia, Pa. Annual meeting, October 21, 1932, New York City.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—T. F. Donahoe, Gen. Supvr. Road. Baltimore & Ohio, Pittsburgh, Pa.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Drawer 24, M. P. O., St. Louis, Mo. Regular meetings, second Friday of each month, except June, July and August, Statler Hotel, St. Louis.

SIGNAL APPLIANCE ASSOCIATION.—Meets with A. R. A. Signal Section.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S.E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—R. G. Parks, A. B. & C. Ry., Atlanta, Ga.

SUPPLY MEN'S ASSOCIATION.—E. H. Hancock, Treasurer, Louisville Varnish Co., Louisville, Ky. Meets with A. R. A. Division V. Equipment Painting Section.

TORONTO RAILWAY CLUB.—J. A. Murphy, P. O. Box 8, Terminal "A," Toronto. Regular meetings first Monday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—L. C. Ryan, Oxweld Railroad Service Co., Carbon & Carbide Building, Chicago. Meets with Roadmasters and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, 1177 East 98th St., Cleveland, O.

WESTERN RAILWAY CLUB.—J. H. Nash, Dri-Steam Valve Sales Corp., 122 S. Michigan Ave., Chicago. Regular meetings third Monday of each month, except June, July, August and September, Hotel Sherman, Chicago.

Equipment and Supplies

FREIGHT CARS

THE UNITED STATES POTASH COMPANY has ordered 12 narrow-gage, hopper-bottom dump cars of 25 tons' capacity, from the Koppel Industrial Car & Equipment Company.

IRON & STEEL

THE DELAWARE & HUDSON is inquiring for 100 tons of steel for two bridges required in grade crossing elimination work.

THE CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC has ordered 580 tons of structural steel for its Burleigh subway in Milwaukee, Wis., from the Milwaukee Bridge Company.

THE PENNSYLVANIA order for 1,420 tons of steel for a viaduct at its Waverly yards, Newark, N. J., has been let to the American Bridge Company by the contractor, the E. H. Latham Company.

THE PENNSYLVANIA will build a bridge over its tracks at Farnhurst, Del., requiring about 110 tons of steel to be supplied by the contractors. The work will be paid for entirely by the State of Delaware.

SIGNALING

TEXAS & NEW ORLEANS.—The Interstate Commerce Commission has reopened its automatic train control proceeding for further hearing on this company's petition to be relieved of further maintenance and operation of automatic train-stop devices under the commission's orders.

MISCELLANEOUS

Northern Pacific Employs Additional Men

Two hundred men have been given employment on the Northern Pacific west of Glendive, Mont., incident to the preparing and placing of 40,000 cu. yd. of ballast. About $50,000 will be expended on the work, which will take about two months. It involves the opening of a gravel washing plant at Horton, Mont., near Miles City.

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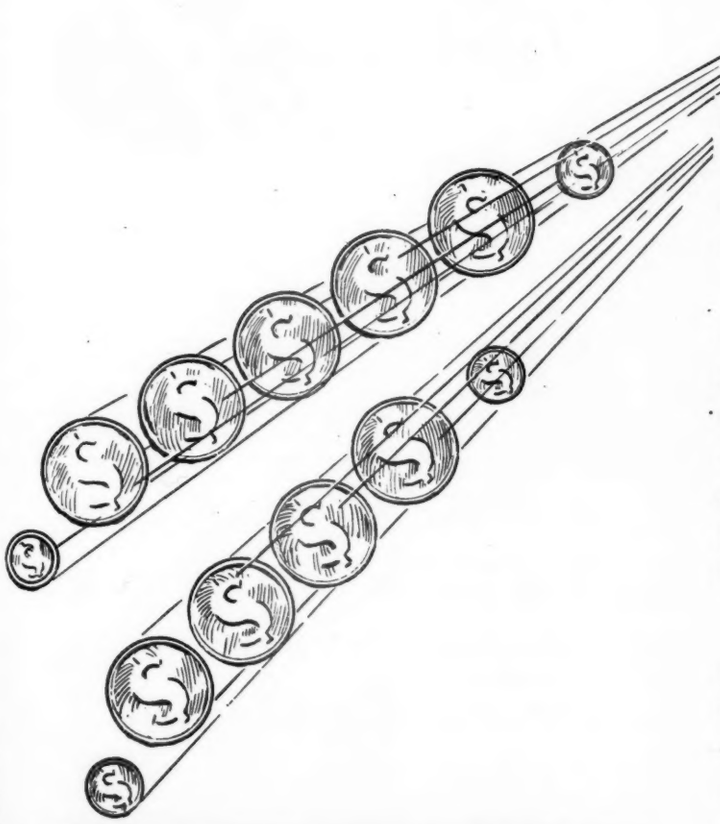
CONTROL DIRECT OPERATING EXPENSE . . . by proper locomotive assignment

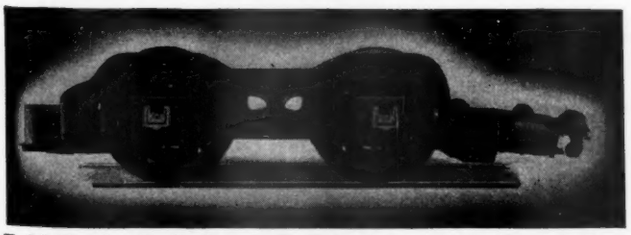


BOOSTER-equipped Mikados cost less to operate than the plain 2-10-2. Two competing roads learned this in a series of competitive test runs between the two classes of locomotives.

Both roads were forced to the speed and improved service modern business now expects. The Booster-equipped Mikado demonstrated its ability to save 13.6% more in direct operating expense than the new, plain 2-10-2 type locomotive. This comparison shows clearly the economic advantage of The Locomotive Booster.

Not only does The Booster provide added power for getting up to road speed in half the time and for hauling heavy freights over ruling grades, but it also makes possible the assignment of locomotives so that normally they work at highest efficiency.

For road, hump and switching service, The Booster provides added power at low cost to meet all emergency demands. Are you taking full advantage of the economy it assures on both existing and new locomotives?



THE LOCOMOTIVE BOOSTER

FRANKLIN RAILWAY SUPPLY CO., INC.

NEW YORK CHICAGO MONTREAL

Supply Trade

F. M. Condit, formerly district manager of **Fairbanks Morse & Company,** Chicago, has been appointed a representative of the **Track Supply Company,** Chicago.

A. M. Castle & Co., Chicago, has been appointed the distributor of the **Babcock & Wilcox Tube Company's** products in the Chicago and Pacific Coast territories.

Ross F. Hayes, 50 Church street, New York, for many years with The Curtain Supply Company and later with The Adams & Westlake Company, after the merger of those companies, has returned to the manufacturers' agency field and the sale of steam and electric railway and bus supplies. Mr. Hayes continues as eastern sales agent for the Henry Giessel Company, Chicago, water coolers, and the Hastings Signal & Equipment Company, Boston, Mass., bridge warnings, and is prepared to handle the products of additional railway supply manufacturers who may desire New York City and eastern territory sales representation.

Lester T. Burwell, until recently vice-president of the Q & C Company, New York, is now president of the **Rails Company,** Chrysler building, New York, a newly-formed organization which is promoting the development and use of Airtrol air-conditioning and pre-cooling systems and other railroad equipment. Mr. Burwell first entered railroad service

Lester T. Burwell

in 1910 with the M W Supply Company, Philadelphia, Pa., and was employed with that company for four years. Since 1914 he has served continuously in various capacities with the Q & C Company except for two years with the United States Army. He was appointed vice-president of the Q & C Company in 1924 and held that position until July 1, 1932.

The Western Railroad Supply Company, 2360 South Ashland avenue, Chicago, has purchased from the General Railway Signal Company the signal business of the Railroad Supply Company and will manufacture and sell a line of railway signaling accessories, including all items formerly manufactured by the L. S. Brach Manufacturing Corporation, the Bryant Zinc Company, the Railroad Supply Company and the signal accessory items of the Chicago Railway Signal & Supply Company. The officers of the Western Railroad Supply Company are: President and general manager, **Godfrey Gort,** formerly vice-president of the L. S. Brach Manufacturing Corporation; treasurer, **Leon S. Brach,** formerly president of the L. S. Brach Manufacturing Corporation; commercial engineer, **Theodore H. Cole;** sales representatives, **John Hensel;** purchasing agent, **William G. Brand;** and plant superintendent, **Walter Dinnerville.** The new company will be represented in New York by **H. M. Buck, Leon S. Brach** and **Arthur H. Smith,** and in Houston, Tex., by the **G. F. Cotter Supply Company.**

Godfrey Gort served his apprenticeship with the General Railway Signal

Godfrey Gort

Company and the Union Switch & Signal Company in signal maintenance and construction work in the New York subways, on the Pennsylvania electrification at Sunnyside Yard and as a foreman in charge of the installation of a-c. signals on the Illinois Central. In 1913, Mr. Gort entered the employ of the L. S. Brach Manufacturing Corporation and continued with that company for 16 years, during which time he rose to vice-president. In 1929, when the L. S. Brach Manufacturing Corporation sold its railroad business to the Railroad Supply Company, Mr. Gort went with that company under a two-year contract, returning to the L. S. Brach Manufacturing Corporation in April, 1931.

OBITUARY

J. Mack Rutherford, western advertising manager of the Simmons-Boardman Publishing Company, publishers of the *Railway Age* and other transportation magazines, with headquarters at Chicago, died suddenly on July 28 at St. Luke's hospital in that city, following a minor operation. He was born at Grinnell, Iowa, on May 18, 1892, and moved to Chicago in 1897, where he attended the public grade schools and Hyde Park high school. After leaving school, Mr. Rutherford entered the employ of the Clarke Stove Company, Chicago, and a short time later went with the Chicago Tribune in its classified advertising sales department. He entered the employ of the Simmons-Boardman Publishing Company in 1916 as an advertising

J. Mack Rutherford

salesman, and on October 1, 1929, was promoted to western manager in charge of advertising sales, the position he was holding at the time of his death. Mr. Rutherford was active in advertising circles in Chicago, being a charter member and a director of the Dotted Line Club; he had also served as a director of the Engineering Advertising Association of Chicago.

* * *

Courtesy New Zealand Railways

Railway and Highway Bridges in New Zealand

Continued on next left-hand page

Construction

ERIE.—Revised general and detailed plans and specifications for the elimination of the Sawyer crossing of this company's tracks in Owego, N. Y., have been approved by the New York Public Service Commission, which has also approved cost estimates for land required by the elimination of the Suffern and Rockwell crossings of the Erie in Horseheads, N. Y.

KANSAS CITY TERMINAL.—A contract has been awarded to the Swenson Construction Company, Kansas City, Mo., for the construction of an addition to the sub-basement of this company's mail-handling building, at a cost of about $200,000. This work will be followed by the installation of belt conveyors, receiving and operating platforms and some supplementary appliances such as elevators, lighting, etc. The project will involve a total expenditure of about $500,000. Plans and specifications for the conveyor installation are now in the course of preparation.

LEHIGH VALLEY.—In order to allow this company to introduce into the record evidence relating to its financial status, the New York Public Service Commission has ordered that various proceedings for the elimination of grade crossings on its lines be reopened and further hearings held.

MARIANNA & BLOUNTSTOWN. — See Financial News, Marianna & Blounstown, this page.

NEW YORK CENTRAL.—Bids received by this company from the Walsh Construction Company, Syracuse, N. Y., for the elimination of Butts crossing, Brighton, N. Y., and from the Hecker-Moon Company, Cleveland, Ohio, for elimination of a grade crossing located on the Watkins-Yates county line state highway just south of Reading Center, Reading, N. Y., have both been approved by the Public Service Commission of New York. The commission has also approved revised estimates of cost for lands to be acquired in connection with the elimination of the Mansion street crossing of the New York Central in Coxsackie, N. Y., of the Boxhart street crossing in Rochester, and of the Great Neck crossing in Phillipstown, N. Y., and has closed proceedings for elimination of grade crossings at Ridge road, West Seneca, N. Y., Grant street and South Scajaquada parkway, Buffalo, and Long Pond road, Gates, N. Y.

NORTHERN PACIFIC.—This company will construct a steel and concrete overhead highway bridge 250 ft. in length at Mandan, N. D., which, together with approaches, will cost about $80,000.

NEW YORK, NEW HAVEN & HARTFORD.—Plans, specifications and cost estimates for the elimination of the Modena turnpike crossing of this company's line in Plattekill, N. Y., have been approved by the Public Service Commission of New York, which has also ordered the reconstruction of the bridge carrying Gedney way, White Plains, N. Y., across the tracks of the New York, Westchester & Boston, a New Haven subsidiary.

PENNSYLVANIA.—See Equipment and Supplies (Iron and Steel), Pennsylvania, page 201.

Financial

ATCHISON, TOPEKA & SANTA FE.—*Control.*—The Interstate Commerce Commission has authorized this company to acquire control by lease of the Eldorado & Santa Fe, the Dodge City & Cimarron Valley and the Elkhart & Santa Fe.

BOSTON & MAINE.—*Abandonment.*—An application has been filed by this company with the Interstate Commerce Commission for authority to abandon parts of its line from Nashua, N. H., to Rochester, between Hudson and Fremont, 21 miles, and between Epping and West Gonic, 18 miles.

CHICAGO & EASTERN ILLINOIS.—*R.F.C. Loan.*—The Interstate Commerce Commission on August 2 approved an additional loan of $753,500 from the Reconstruction Finance Corporation to pay taxes to the state of Illinois and Cook county. This is the fifth instalment approved on the company's application for $7,796,436, loans amounting to $4,907,080 having been previously approved. Commissioner Mahaffie dissented, saying that in view of the earnings of the applicant in 1930, 1931, and the first half of 1932, he was unable to agree that the security available was adequate for the additional loan.

CHICAGO, BURLINGTON & QUINCY.—*Abandonment.*—The Interstate Commerce Commission has authorized this company to abandon a portion of a branch line extending from a point near Mount Morris, Ill., northwesterly to Forreston, 11 miles.

CHICAGO GREAT WESTERN.—*R.F.C. Loan.*—The Interstate Commerce Commission has approved a loan of $1,289,000 to this company from the Reconstruction Finance Corporation for the payment of taxes and maturities of equipment obligations. The company had applied for $2,000,000 but now expects to obtain $710,880 for interest payments from the Railroad Credit Corporation.

COLUMBUS & GREENVILLE.—*R.F.C. Loan.*—This company has applied to the Interstate Commerce Commission and the Reconstruction Finance Corporation for a loan of $100,000 to complete the construction of a steel bridge, to restore its roadbed, and to pay taxes.

DENVER & RIO GRANDE WESTERN.—*R.F.C. Loan.*—This company has applied for a loan of $4,000,000 from the Reconstruction Finance Corporation for the construction of the Dotsero cut-off in Colorado, which it is required to begin by September 15 under one of the conditions imposed by the Interstate Commerce Commission when it authorized the acquisition of control of the Denver & Salt Lake. The company has also applied to the commission for a modification of the condition that it purchase minority stock of the D. & S. L. by the same date at $155 a share, providing, if the loan is granted, for a further extension of time in which to purchase the 20,530 shares of minority stock. Under a plan worked out with representatives of the minority holders of D. & S. L. stock the D. & R. G. W. is to deposit a number of shares equal to the minority with the Colorado National Bank, of Denver, as trustee, as security for an option by the minority holders to tender their stock for purchase in the period from July 1, 1934, to January 1, 1935. If the D. & R. G. W. fails to purchase the stock the minority holders will be entitled to a return of their own stock tendered for purchase and also the stock deposited by the D. & R. G. W. as liquidated damages. This plan will provide for the early construction of the cut-off and give the minority stockholders collateral security for the performance by the D. & R. G. W. of its obligation to purchase the stock.

DENVER, INTERMOUNTAIN & SUMMIT.—*Acquisition.*—This company, organized for the purpose on November 15, 1930, has applied to the Interstate Commerce Commission for authority to acquire and operate the narrow-gage line abandoned by the Colorado & Southern from Denver to Leadville, Colo., 204 miles, which the C. & S. offered to donate to any local interests who would continue operation.

GRAND TRUNK WESTERN.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue $2,000,000 of first and general mortgage bonds due January 1, 1980, to finance expenditures for additions and betterments made in 1930 and 1931 not yet capitalized.

HOOSAC TUNNEL & WILMINGTON.—*R.F.C. Loan.*—The Interstate Commerce Commission has approved a loan of $23,600 to this company from the Reconstruction Finance Corporation on its application for $60,000. The amount approved is to pay balances due the Boston & Maine, bank loans, and unpaid vouchers. Commissioner Mahaffie dissented.

KNOX.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon its line from Union, Me., to Warren, 8 miles.

MARIANNA & BLOUNTSTOWN.—*Acquisition and Construction.*—Examiner O. D. Weed has recommended in a proposed report that the Interstate Commerce

Continued on next left-hand page

Commission authorize this company to acquire for $40,000 the Alabama, Florida & Gulf, extending from Cowarts, Ala., south to Greenwood, Fla., 32 miles. The report also recommends that the Marianna & Blountstown be authorized to construct a connection between the southern terminus of the Alabama, Florida & Gulf at Greenwood south to a junction with its own line at Marianna, 9 miles, and an extension of the A., F. & G. from a point thereon at or near Wilson, Ala., northwest to Dothan, 5 miles. The estimated cost of the two extensions is $89,970.

MINNESOTA TRANSFER. — *Bonds.* — The Interstate Commerce Commission has authorized this company to issue $234,000 of first mortgage bonds to be delivered to its nine proprietary companies in reimbursement for advances for additions and betterments.

NIAGARA JUNCTION.—*Authority to Lease Niagara Gorge Denied.*—The Interstate Commerce Commission has denied the application of this company to acquire control of the Niagara Gorge Railroad by lease.

NORFOLK & WESTERN.—*Abandonment.*—The Interstate Commerce Commission has authorized this company to abandon that portion of its Potts Valley branch extending from Oehl, W. Va., to the end of the branch at Paint Bank, 33.6 miles.

NORFOLK SOUTHERN.—*Receivers.*—G. R. Loyall, president, and L. H. Windholz were named receivers of this company on July 28 by the Federal court at Norfolk, Va.

A statement issued to the road's stockholders by Mr. Loyall at the time of his appointment as receiver, giving unregulated motor truck competition as one of the outstanding reasons for the receivership, reads as follows:

"On application of counsel for Fruit Growers' Express Company the properties of the Norfolk Southern were placed in the hands of receivers by the judge of United States court for the Eastern district of Virginia. The proceeding, which was entirely friendly, was instituted only after conferences by the management with representative stockholders, bondholders and others holding obligations of the company.

"The revenues of the company have been so seriously affected by the depression, unregulated truck competition and the general use of private automobiles for passenger transportation, that it has been apparent for sometime that unless business conditions soon improved this course was inevitable. There has been no improvement.

"The operations for the calendar year of 1931 resulted in a deficit, after payment of all charges, of $498,043. For the first six months of the present year the deficit amounted to $563,554. These deficits practically exhausted the cash resources and borrowing capacity of your company and brought about a condition which necessitated, for the purpose of protecting the interest of all parties, the administration of its properties through the medium of a receivership until such time as returning business prosperity warrants the management in asking that they be returned to the railroad company for operation."

PERE MARQUETTE.—*Abandonment.*—Applications have been filed with the Interstate Commerce Commission for authority to abandon three branch lines in Michigan, from Port Austin to Grindstone City, 5.2 miles; from Otter Lake to Fostoria, 5.15 miles; and from Mears Junction to Pentwater, 6.82 miles.

ROCK ISLAND OMAHA TERMINAL.—*Bonds.*—The Interstate Commerce Commission has authorized an issue of $306,000 of first mortgage bonds to be delivered to the Chicago, Rock Island & Pacific in satisfaction of indebtedness for advances.

SEABOARD-ALL FLORIDA. — *Receivers' Certificates.*—The Interstate Commerce Commission has authorized the receivers of this company to issue $309,000 of receivers' certificates, the proceeds to be used to pay taxes.

SEABOARD AIR LINE.—*R.F.C. Loan.*—The receivers have applied for a loan of $3,000,000 from the Reconstruction Finance Corporation to discharge claims of about 2,000 creditors for services, labor, materials and supplies, offering receivers' certificates as security.

SILVERTON NORTHERN.—*R.F.C. Loan.*—The Interstate Commerce Commission has denied this company's application for a loan of $12,945 for the Reconstruction Finance Corporation to pay one-half of a bank loan, taxes, maintenance, and unpaid wages and salaries, stating that it was unable to find that the corporation would be adequately secured.

SOUTHERN PACIFIC.—*Bonds.*—The Interstate Commerce Commission has authorized this company to substitute an uncapitalized equity of $24,545,658 for a like amount of capital expenditures as a part of the basis for the issue of $50,000,000 of 50-year 4½ per cent bonds and to pledge $35,646,107 of Central Pacific 4 per cent 35-year European loan of 1911 bonds as collateral security for short term notes, the Southern Pacific to be obligated as guarantor of the latter issue.

TEXAS & PACIFIC.—*Control of Fort Worth Belt.*—The Interstate Commerce Commission has authorized this company to acquire control of the Fort Worth Belt by acquisition of capital stock.

UVALDE & NORTHERN.—*R.F.C. Loan.*—This company has applied to the Interstate Commerce Commission and the Reconstruction Finance Corporation for a loan of $50,000 to rehabilitate its property.

VIRGINIA BLUE RIDGE.—*R.F.C. Loan.*—This company has applied for a loan of $150,000 from the Reconstruction Finance Corporation, to pay accounts.

WABASH.—*R.F.C. Loan.*—The Interstate Commerce Commission has approved an additional loan to the receivers of $4,575,000 from the Reconstruction Finance Corporation for the purpose of providing funds to pay 50 per cent of the net amount of outstanding bank loans from nine banks, due August 19. All but two of the banks had indicated their willingness to extend 50 per cent of the indebtedness for three years and all are expected now to carry the amount at 5 per cent. The loans were originally made in 1931 at 4½ per cent. Under the plan the gross indebtedness will be reduced by $600,000, which is the approximate amount of company funds impounded by the First National Bank of St. Louis and the Mercantile-Commerce Bank & Trust Company, and litigation involving it will be terminated. As security for the loan the receivers are to deposit an equal amount of receivers' certificates. The receivers had originally applied for a loan of $18,500,000 and the commission has heretofore approved loans of $7,173,800 and $1,576,200, but it had deferred consideration of the bank loans pending an understanding with the banks as to the extent to which they could and would forbear upon or extend the obligations. The applicants had pointed out that the loans were made by the banks at a time when money was urgently needed by other interests and could have been loaned for a shorter term.

Dividends Declared

Bangor & Aroostook.—Common, 50c, quarterly; Preferred, $1.75, quarterly, both payable October 1 to holders of record August 31.

Erie & Kalamazoo.—$2.50, payable August 1 to holders of record July 26.

Oswego & Syracuse.—$2.25, semi-annually, payable August 20 to holders of record August 8.

Average Prices of Stocks and of Bonds

	Aug. 2	Last week	Last year
Average price of 20 representative railway stocks..	16.82	14.76	63.25
Average price of 20 representative railway bonds..	57.10	54.54	90.25

Tentative Valuation Reports

The Interstate Commerce Commission has issued tentative valuation reports by Division I stating the final value for rate-making purposes of the property owned and used for common-carrier purposes as of the respective valuation dates as follows:

Bonhomie & Hattiesburg Southern	$520,000	1928
Greenville & Northern	450,000	1928
Oklahoma & Rich Mountain	190,000	1927
Graham County	310,000	1928
North & South (used but not owned)	1,405,237	1927
Fore River	225,000	1927

THE NEW YORK CENTRAL has installed Dictaphones on the Twentieth Century Limited between New York and Chicago. The machine is set up in the club car of the train and is available to any passenger or the train secretary will place the machine wherever in the train the passenger may desire it. He will arrange for transcription of the dictation or for mailing of the cylinders to the passenger's office or will mail dictated cylinders en route to any point the passenger may designate.

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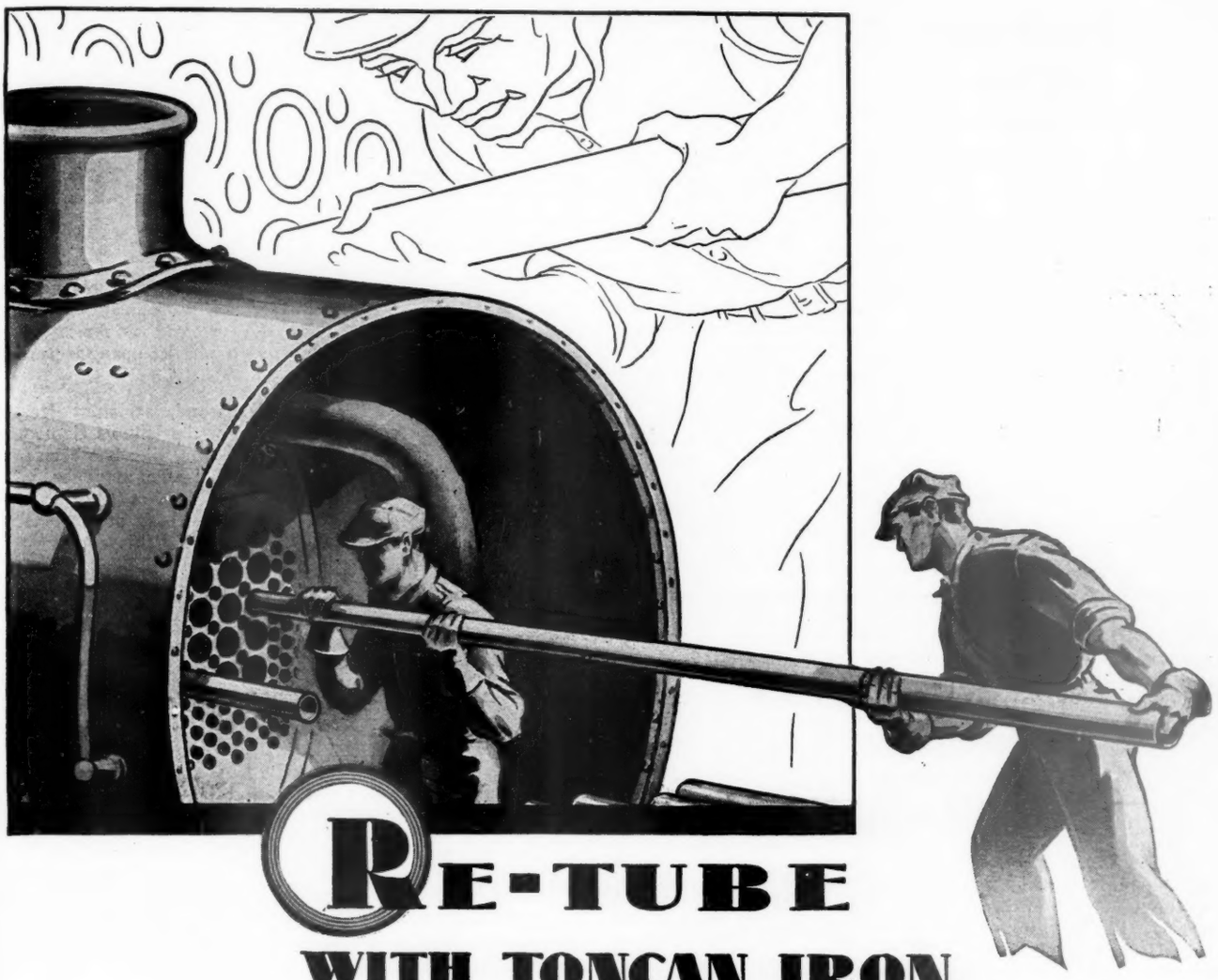

RE-TUBE WITH TONCAN IRON FOR LONGER LIFE

Corrosion, fire-cracking, vibration and the other common causes of boiler tube trouble have little effect on the boiler tube of Toncan Iron. Service records bear this out. « Toncan Iron has a superior resistance to corrosion. Copper and molybdenum alloyed with refined iron results in a boiler tube material that successfully combats the inroads of corrosion. In addition, Toncan Iron possesses a high fatigue resistance as shown by its widespread use in staybolts. « Finally, Toncan Iron works easily and prevents loss in application. Moreover the cold-working does not affect the resistance of Toncan Iron to subsequent fire-cracking. « From every point of view Toncan Iron boiler tubes should be used for re-tubing locomotives at the shopping period.

Toncan Iron Boiler Tubes, Pipe, Plates, Culverts, Rivets, Staybolts, Tender Plates and Firebox Sheets • Sheets and Strip for special railroad purposes • Agathon Alloy Steels for Locomotive Parts • Agathon Engine Bolt Steel • Nitralloy • Agathon Iron for pins and bushings • Agathon Staybolt Iron • Climax Steel Staybolts • Upson Bolts and Nuts • Track Material, Maney Guard Rail Assemblies • Enduro Stainless Steel for dining car equipment, for refrigeration cars and for firebox sheets • Agathon Nickel Forging Steel (20-27 Carbon)

TONCAN COPPER Molyb-den-um IRON

The Birdsboro Steel Foundry & Machine Company of Birdsboro, Penna., has manufactured and is prepared to supply under license, Toncan Copper Molybdenum Iron castings for locomotives.

REPUBLIC STEEL CORPORATION

GENERAL OFFICES: YOUNGSTOWN, OHIO

Railway Officers

EXECUTIVE

Morris McDonald, president of the Maine Central, resigned effective August 3, and **Edward S. French,** president of the Boston & Maine, has been elected president of the Maine Central also. As executive head of both roads Mr. French will divide his time between the Maine Central headquarters in Portland, Me., and the general offices of the Boston & Maine in Boston, Mass.

Following the appointment of receivers for the Norfolk Southern as announced elsewhere in this issue of *Railway Age,* the following changes have been made, effective July 28: **M. S. Hawkins,** assistant to president and secretary, appointed assistant to receivers; **E. D. Kyle,** vice-president, traffic, appointed chief traffic officer; **J. F. George,** treasurer, appointed to the same position for receivers; **J. C. Nelms, Jr.,** general auditor, appointed chief accounting officer for receivers; **L. A. Beck,** assistant to president, purchasing and mechanical, appointed chief purchasing and mechanical officer.

OPERATING

C. R. Moore, general superintendent of transportation of the Central region of the Canadian National, has retired, and **J. F. Pringle,** assistant general superintendent of transportation, has been appointed general superintendent of transportation, succeeding Mr. Moore. **J. A. Murphy,** assistant to general superintendent, has been appointed superintendent of transportation at Toronto, Ont., succeeding **W. S. Wilson,** retired. The positions of assistant general superintendent of transportation and assistant to general superintendent have been abolished.

W. R. Davidson, assistant general manager of the Grand Trunk Western, with headquarters at Detroit, Mich., has been appointed general superintendent of transportation, succeeding **J. A. Clancey,** who has been appointed superintendent of the Detroit division with jurisdiction over the Detroit terminals, succeeding **T. King,** retired. The position of assistant general manager has been abolished. **E. F. Gorman,** superintendent of terminals, with headquarters at Detroit, Mich., has been appointed terminal superintendent of Detroit terminals, with headquarters at Milwaukee Junction, Mich.

W. C. Muir, general manager of the Canadian National Express, retired on August 1, and **G. E. Bellerose,** assistant general manager, has been appointed to succeed Mr. Muir as general manager. The position of assistant general manager will not be filled. Mr. Muir was born at Clinton, Ont., in 1866, and entered express service at Toronto with the American Express Company 48 years ago. He was later appointed agent of the Dominion Express Company at Winnipeg, Man., and joined the Canadian Northern Express in 1902, serving successively as superintendent, auditor and general superintendent. In 1921, upon the amalgamation of the Canadian Northern and Canadian Express Companies, Mr. Muir became vice-president and general manager at Montreal, and was appointed general manager of the Canadian National Railways Express department in 1924.

Mr. Bellerose commenced railway work as clerk in the car service department of the Grand Trunk at Toronto in 1902. In 1903 he became clerk and messenger with the Dominion Express and was subsequently with the Great Northern and Dominion Express at various points in Western Canada, British Columbia and the northeastern states. In 1917, Mr. Bellerose joined the Canadian Northern Express Company as messenger at Winnipeg. He became traffic supervisor later in 1917 and in 1920 was appointed assistant to the general manager, Canadian National Express, at Winnipeg. In 1921, Mr. Bellerose moved to Montreal as general assistant and in July, 1923, he was appointed general superintendent of transportation, Canadian National Express, which position he held until his appointment as assistant general manager in 1928.

E. C. Wills, assistant general manager of the Missouri Pacific in charge of wage and labor matters, has retired effective August 6, at the age of 70 years, after 43 years of service with that company. Mr. Wills was born on August 6, 1862, at Greensboro, Ala., and entered railway service in December, 1889, as a clerk on the Missouri Pacific at Atchison, Kan. In February, 1903, he was appointed chief clerk in the office of the superintendent at Wichita, Kan., and four years later he was made trainmaster at Coffeyville, Kan. After serving for a time in the same position at

E. C. Wills

Hoisington, Kan., Mr. Wills was made labor clerk in the office of the general manager at St. Louis. In February, 1916, he was advanced to assistant to the general manager in charge of matters concerning personnel, and in January of the following year he was appointed division superintendent at Atchison. Subsequently, Mr. Wills was transferred to the Wichita division and on November 16, 1917, he was promoted to assistant general manager at St. Louis, which position he held until his retirement.

TRAFFIC

Charles H. Hagerty, general agent of the Pennsylvania, with headquarters at Louisville, Ky., retired on August 1 in accordance with the company's pension regulations.

William Haywood, assistant freight traffic manager of the Illinois Central in charge of solicitation, who has been promoted to freight traffic manager, with headquarters as before at Chicago, was born on May 30, 1884, at Lancaster, England. He came to this country and

William Haywood

entered railway service in 1901 as a messenger in the office of the traffic manager of the Illinois Central, serving in this position and as secretary to various traffic officials, including the vice-president in charge of traffic, until 1909. At that time he was made secretary to the president, and in 1912 he was appointed chief clerk to the vice-president in charge of traffic, being promoted to assistant general freight agent of the Northern and Western lines five years later. In 1920, Mr. Haywood was further advanced to the position of assistant to the traffic manager and in 1921 he was made general freight agent in charge of solicitation. Seven years later he was made assistant freight traffic manager at Chicago, which position he held until his recent appointment as freight traffic manager.

ENGINEERING AND SIGNALING

P. D. Fitzpatrick, engineer in charge of construction of the terminal station of the Canadian National at Montreal, Que., has been promoted to chief engineer of the Grand Trunk Western, with headquarters at Detroit, Mich., to succeed **J. A. Heaman,** who has been trans-

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UNDER THE INFALLIBLE LAW OF ECONOMICS

THERE is no such a thing as something for nothing. Realization of this fact is always most apparent in times of economic stress. Knowledge of actual costs proves the economy of rail transportation. The public is awakening—the crisis is past.

There are no substitutes for economical service. The first accurate accounting reveals the mirage—and in the case of materials, it will be found that those which last longest are always the least expensive.

HUNT-SPILLER *Air Furnace* GUN IRON has been serving industries for over one hundred years. Its economical performance is known from coast to coast—from the Hudson Bay to the Rio Grande.

Today, in spite of the ever increasing requirements, its use and scope of application are constantly increasing. Compared under the severe law of economics, initial cost versus all savings, no other material offers greater return on the investment.

HSGI
Reg. U. S. Trade Mark
Cylinder Bushings
Cylinder Packing Rings
Pistons or Piston Bull Rings
Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings
Parts Finished for Application
Dunbar Sectional Type Packing
Duplex Sectional Type Packing
(Duplex Springs for Above Sectional Packing)
Cylinder Snap Rings
Valve Rings All Shapes

HUNT-SPILLER MFG. CORPORATION
J. G. Platt, Pres. & Gen. Mgr. V. W. Ellet, Vice-President

Office & Works
383 Dorchester Ave. South Boston, 27, Mass.
Canadian Representative: Joseph Robb & Co., Ltd., 997 Aqueduct St., Montreal, P. Q.
Export Agent for Latin America:
International Rwy. Supply Co., 30 Church Street, New York, N. Y.

HUNT-SPILLER GUN IRON
Air Furnace

ferred to Montreal. In addition to the duties heretofore performed by Mr. Heaman, Mr. Fitzpatrick will have charge of bridges and buildings and track and signal maintenance.

MECHANICAL

W. E. Barnes, general superintendent of motive power of the Atlantic region of the Canadian National, has been appointed general superintendent of motive power and car equipment of that region. The position of general superintendent of car equipment of the Atlantic region, formerly occupied by **G. E. McCoy,** who has been appointed assistant general superintendent of car equipment, Central region, has been abolished **J. C. Garden,** general superintendent of motive power and car equipment of the Central region, has retired, and **John Roberts,** general supervisor of shop methods, with headquarters at Montreal, has been appointed to succeed Mr. Garden.

OBITUARY

Charles B. Wright, president of the Rio Grande & Eagle Pass, with headquarters at Philadelphia, Pa., died on July 28 of heart failure.

Arthur H. Ryder, formerly connected with the real estate department of the New York, New Haven & Hartford, died at New Haven, Conn., on July 27.

Isaac Bromley, formerly advertising and press agent for the New York, New Haven & Hartford, died at New London, Conn., on July 29. Mr. Bromley organized the public relations bureau of the New Haven, the first of its kind in this country, in 1888, and was subsequently connected with that department until his retirement in 1915.

James B. Cox, who resigned as chief engineer of the Chicago Junction in 1905, died at Chicago on July 31. He was born on October 30, 1857, and was educated at Pennsylvania college. He entered railway service in 1880 as a rodman on the Pennsylvania, which position he held until 1882, when he was promoted to assistant supervisor. From 1889 to 1895 he engaged in private engineering practice and in the latter year became assistant engineer on the Chicago, Hammond & Western (now part of the Chicago Junction). He held this position until June 1, 1898, when he was appointed chief engineer of the Chicago Junction. In 1905 he resigned from this position to become a consulting engineer, which occupation he followed until his death. Mr. Cox was a charter member of the American Railway Engineering Association and had served as a member of the Committee on Arrangements since the inception of the organization.

P. F. McManus, retired general manager of the Elgin, Joliet & Eastern, who died on July 22 at his home at Joliet, Ill., was born on July 1, 1873, at Chatham, Ill.. and entered railway service in 1890 as a telegraph operator on the San Antonio & Aransas Pass (now part of the Texas & New Orleans), later serving as an agent. Until 1895, Mr. McManus served successively in the same position with the Iowa Central (now part of the Minneapolis & St. Louis), the Atchison, Topeka & Santa Fe, and the Chicago & Alton (now the Alton), and in that year he became connected with E. J. & E., as a telegraph operator, advancing through the positions of train dispatcher and chief train dispatcher. In March, 1901, Mr. McManus went with the Grand Trunk as a train dispatcher and later in the same year he was appointed to the same position on the St. Louis, Iron Mountain & Southern (now

P. F. McManus

part of the Missouri Pacific), where he later served as chief train dispatcher and standard train rules instructor. On March 17, 1902, Mr. McManus returned to the E. J. & E. as a trainmaster, being promoted successively through the positions of assistant superintendent, superintendent and general superintendent. On October 15, 1927, he was advanced to general manager, which position he retained until his retirement on December 31, 1931.

Louis A. Richardson, general superintendent of motive power of the Chicago, Rock Island & Pacific, with headquarters at Chicago, who died on July 26 at his home in that city, was born on December 14, 1869, at Bucklin, Mo., and entered railway service in 1883, as a mechanical apprentice on the Kansas City, St. Joseph & Council Bluffs (now a part of the Chicago, Burlington & Quincy). Later he served in various capacities with the Union Pacific, the Southern Pacific, the Oregon Short Line, the Denver & Rio Grande, the New York Central and other lines, and in 1906 he entered the service of the Rock Island as a master mechanic at Trenton, Mo. In 1913, Mr. Richardson was promoted to mechanical superintendent of the second district, with headquarters at El Reno, Okla., subsequently being transferred to the first district, with headquarters at Des Moines, Iowa. In 1926, he was promoted to general superintendent of motive power of the system, with headquarters at Chicago, which position he held until his death.

H. M. Adams, Former President of Western Pacific, Dies

Harry M. Adams, who retired as president of the Western Pacific on January 1, 1932, died at Berkeley, Cal., on July 30. He was born on January 3, 1867, at Camanche, Iowa, and entered railway service in 1880 as a messenger on the St. Louis & San Francisco. After holding various positions on several railroads, Mr. Adams was elected vice-president in charge of traffic of the Union Pacific in 1919 and held that position until the close of 1926. He was elected president of the Western Pacific early in 1927, assuming the duties of that office on April 1 of that year. A detailed sketch and photograph of Mr. Adams appeared in the *Railway Age* of November 28, 1931, page 827, upon the occasion of his retirement as president.

R. N. Collyer, Trunk Line Association Chairman, Dies

Robert Norman Collyer, chairman of the Trunk Line Association, died on August 1 at his home in Maplewood, N. J., following a protracted illness. Mr. Collyer, at the time of his death, was chairman of the principal railroad traffic organizations in the eastern part of the United States, including the Presidents' Traffic Conference—Eastern territory, the Traffic Executive Association—Eastern territory, and similar committees of railway presidents and traffic executives in trunk line territory. He was also chairman of the Import Committee and the Bill of Lading Committee for Eastern territory.

Mr. Collyer was born on October 8, 1866, at Stockton, England, and entered railroad service in 1881 with the Cleveland, Columbus, Cincinnati & Indianapolis (now the Cleveland, Cincinnati, Chicago & St. Louis). Subsequently, he served with the Chicago, Burlington & Quincy and the Wabash, until September,

Robert N. Collyer

1908, when he became chairman of the Committee on Uniform Classification. From January, 1912, to February, 1920, Mr. Collyer was chairman of the Official Classification Committee; and since March, 1920, he has been chairman of the Trunk Line Association and of the various other organizations above mentioned.